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CALCUTTA, 1935

CALCUTTA
AND
SUBURBS



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PREFACE.

It has been the practice of the Local Reception Committee of the Indian Science Congress to present to the members of the Congress a hand-book of the City in which the session is held. A hand-book of Calcutta was published for the 15th Session of the Congress held in 1928. The editor of the present compilation while utilising much of the materials contained in that hand-book has followed a somewhat different plan. He has tried to draw a picture of the varied life of the modern city and give a connected account of its past, in broad outline. The intellectual, scientific and industrial activities of the modern city have also been given in as comprehensive a way as possible.

For unavoidable difficulties it has been necessary for the editor to omit a Chapter on "Art and Literature" in which it was intended to describe the place of Calcutta in modern Indian literature, journalism, music, art and architecture.

The compilation could have been made more satisfactory if the editor had more time at his disposal. But even as it is the work would have been impossible without the kind co-operation of the heads of various Institutes and Societies and the editor therefore wishes to acknowledge his indebtedness to those gentlemen.

P. C. BAGCHI.

Calcutta,
January 2, 1935.

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VICTORIA MEMORIAL

CALCUTTA AND SUBURBS

CHAPTER I

THE GEOGRAPHICAL ENVIRONMENT

Calcutta is situated in $23^{\circ} 33' 47''$ North and $88^{\circ} 23' 34''$ East along the left bank of the Hooghly, or the Bhagirathi which is the western arm of the Ganges.

The Situation of Calcutta. It is about 100 miles inland from the place where the river falls into the Bay of Bengal. A large section of the localities in the suburbs can be included under what may be called the Greater Calcutta. From one end to the other of this long line of garden houses, temples, mills, bathing ghats, burning ghats, dwelling houses, wharves, docks, etc. it would be nearly ten miles. The width of this line generally does not exceed two miles but near Kidderpore in the south it extends to more than four miles in width. The area of the city would be thus a little over 30 sq. miles. The river on which the city stands is less than half a mile in width near Howrah bridge but at other places this increases nearly to a mile. From north to the south of Greater Calcutta on the left bank of the river we find Cossipore, Calcutta proper, Maniktalla, Entally (N. E.), Ballygunge (S.E.), Kidderpore (S. W.), Alipore, Bhowanipur, Kalighat (S. central) and Tollygunge as important centres of population. On the right bank of the river are situated Ichapur, Salkia, Howrah and Sibpore. The actual population of Calcutta is about 12 millions. The city is in constant communication with large towns in its neighbourhood like Serampore, Chandernagore, Hooghly, Chinsurah etc.

But Calcutta came into existence only towards the end of the 17th century. Three small villages, Sutanuti, Govindpur and

Kalikata constituted the nucleus of the future premier city of India. If we go to still earlier times we have practically no evidence to prove the existence of any agglomeration of people worth mentioning on that side of the river on which Calcutta came to be founded.

From a geological point of view the lower Gangetic delta in which Calcutta is situated is of a comparatively late formation. Important bore operations were carried out in Calcutta during 1835-40 and the bore-hole in Fort-William reached a depth of 460 feet below the mean sea level. The operations revealed the complete absence of marine deposits throughout the depth of the bore-hole. The existence of peat-beds at 30-35 feet and 382-395 feet below the surface was discovered and besides fine sand and pebbles derived from the gneissic rocks were found at different depths viz., at 170-180 feet, 320-325 feet and 400-480 feet.

These discoveries supported by similar other finds in different parts of the delta have led expert geologists to the conclusion that in the remote past the deltaic region was not the "monotonous level from horizon to horizon which it has been from the dawn of history. We must picture a range of gneissic hills standing ruggedly out into the sea, and must imagine the subsequent depression of these which extended the empire of the tides far inland. This depressed territory becomes in time filled over with loose sediment which sinks by the weight of its superincumbent layers until finally they are covered with the existing alluvial strata which are indisputably of very recent geological origin being all pleistocene (post-tertiary)."

Thus according to the calculation of expert geologists the lower Gangetic plains below the Rajmahal Hills came to be elevated by fluvial deposits about four or five thousand years ago. In the region of Calcutta the elevation of the area has however been alternately followed by a subsidence, and even in historical times the extreme south-eastern portion including the districts of Khulna, Jessore, the Sunderbans and Calcutta was not fully formed in the 7th century of the Christian Era when East Bengal was sufficiently inhabited to form the nucleus of a kingdom.

On the other hand there is no doubt that the country to the west of the Hooghly contained a number of prosperous cities and ports and formed part of an ancient kingdom. The port of Tāmralipti (modern Tamluk) situated on the southern bank of the Rupnarayan about 12 miles from its confluence with the Hooghly is mentioned in very early literature both Indian and foreign. It is referred to both as a port and as the capital of a kingdom, which might have been Suhma, in old Jaina texts which go back to the beginning of the Christian era, if not earlier. Amongst the Greek sources the *Periplus of the Erythrean Sea* written towards the middle of the first century A. D. mentions the existence of an important market-town on the Ganges called *Gange* and about a century later Ptolemy calls it the metropolis of a powerful kingdom called the *Gangaridai*, which is located by him along the delta of the river. The port of *Tamalites* (Tāmralipti) is located by him a little higher up the river.

It is probable that Tāmralipti or Tamluk was the only port of Bengal for a long time. It lost its importance in the 10th century as the river on which it was situated gradually silted up. It, however, continued its existence as a small market till the advent of the Portuguese in Bengal who converted it into one of their early settlements.

With the decline of Tamluk as a port the centre of distribution was shifted to other places. Satpagrāma or Satgaon, situated on the Saraswati and not far from modern Hooghly grew up to be an important port, took the place of Tamluk and remained so till the beginning of the 16th century when the river Saraswati silted up and the river began to flow down the main channel. Even up to the middle of the 16th century large vessels sailed up to Satgaon with merchandise and during the reign of Akbar the city brought an income of about 30,000 Rupees.

During this period to the south-east of the delta another port, Chittagong (Chātigāon) had risen into prominence. Chittagong attracted the foreigners more than any other port so long as Gaur remained the capital of Bengal. After the fall of Gaur in the middle of the 17th century Chittagong also lost its importance.

After the decline of these two ports—Chittagong and Satgaon which were known to the Portuguese as *Porto Grande* and *Porto Pequeno* respectively—Hooghly which was only small settlement of the Portuguese in 1580 rose to be the greatest centre of trade and commerce in Bengal.

From medieval Bengali works like the *Chaṇḍi* of Mukundarama (1577 A.D.), *Manasāmangal* of Vipradāsa (1495 A.D.) etc., it

The rivers. evident that the river courses were different from what they are now. The Ādi-Gangā or the Tolly's Nullah which is now a small streamlet carried even in the 16th Century the main current of the Ganges. The lower Hooghly was in fact the lower Saraswati. There are evidences to prove that the lower Saraswati was connected with the Ganges by a canal from near Kidderpore to Sankerole and when the Saraswati silted up and the whole current made its way through the Ganges the canal widened up and the Hooghly assumed its present shape. The Ādi-Gangā consequently suffered and lost the supply of more voluminous current. The map of lower Bengal drawn by De Barros in the middle of the 16th century clearly shows that both the Saraswati and Ādi-Gangā were then prominent rivers.

The names of prosperous localities which existed in the 16th Century A. D. on either side of the river are given in the *Chaṇḍikāvya*.

Localities in the 16th century. These are Saptagrāma, Garefa (Gouripur), Andalpara, Jagathal, Nowpara, Teliapara Nunai Ghat, Mahesh on the right side, and Kurdaha, Konnagar, Kotrung, Kuchinan, Chitpur, Sulkhia, Kalikāttā (Calcutta), Bithoor (Betor, or modern Howrah). "Leaving on the right the way to Hijuji (Hijli) they turned to the left, passed Balughata, Kalighat, Mirnagar, Nachangacha, Vaisnavaghata, Barasat, Chatrabhuj, Ambribhuj, Hithagar and then came to Mogara". Most of these places are still familiar to us and though many other places in their midst have come into existence during the meantime they have not lost their identity.

The advent of the Portuguese. The Portuguese who were the first to come to Bengal first settled in Saptagrāma in 1537-1538 and most probably erected a factory there, and established a custom house. But as Satgaon gradually became unsuitable

for their business on account of the gradual silting up of the river Saraswati they diverted their attention to a neighbouring site, that of present Hooghly, on the main channel of the Ganges.

At the beginning the Portuguese did not permanently stay in Bengal. They remained in Bengal during the rainy season buying and selling goods and went home to Goa when the rains were over. Later on the Portuguese remained for one or two years without going back and the Mahomedan collector in the district even invited them to bring their fathers and erect churches. Akbar seeing the precious goods which the Portuguese used to bring to Bengal from Borneo, Malacca and other ports ordered the Nawab of Dacca under whom the Hooghly district then was, to send from Satgaon two principal Portuguese to his Court in Agra. The Portuguese were not however available till the next year (1579-80) when two Portuguese under Captain Pedro Tavares went to Agra. Akbar was favourably impressed with the conduct of the Portuguese and had several interviews with Tavares. He gave him many valuable presents and a farman permitting him to build a city in Bengal wherever he liked. He granted the Portuguese full religious liberty with leave to preach their religion and build churches and even baptize the gentiles with their consent. Besides the Mughal officers were ordered to help the Portuguese with all materials necessary for the construction of their houses.

Tavares returned to Hooghly in 1579-80, chose a favourable site there and established the settlement which soon grew into the greatest centre of trade in Bengal. The decline of Satgaon facilitated the development of Hooghly. In fact Satgaon would not have probably declined so rapidly if the Portuguese had not abandoned it and diverted their trade to their new settlement. There was some truth in the complaint which the Mughal officers lodged to their Emperor towards the end of the 16th century that the revenue of Satgaon was decreasing on account of the Portuguese.

Whatever it might have been due to, Satgaon soon lost its

importance and Hooghly flourished with amazing rapidity. Towards the end of the century, probably in 1599, the Portuguese provided themselves with a fort. As to their doings we however know less. Only three names of their Governors have been preserved : Pedro Tavares (1580), Miguel Rodrigues (1623), and Manoel d'Azavedo (1632). As to their doings some light is thrown by a contemporary account written between 1583 and 1589 : "The Portingalles deale and traffique thether and some places are inhabited by them, as the havens which they call Porto Grande (Chittagong) and Porto Pequeno (Hooghly) that is the great haven and the little haven but there they have no Fortes nor any government, nor policie as in India (they have) but live in a manner like wild men and untamed horses for that every man doth there what he will, and every man is Lord (and maister) neyther esteeme they anything of justice, whether there be any or none, and in this manner doe certayne Portingalles dwell among them some here, some there, (scattered abroad) and are for the most part such as dare not stay in India for some wickedness committed ; notwithstanding there is great trafficke used in those partes by diverse ships (and merchants) which all the year diverse times both go to and from all the Oriental ports." This information may not be exact and it is quite probable that under the Governors the Portuguese settlement of Hooghly was an organised one. In 1580 the Mughal Faujdar at Satgaon, Mirza Najat Khan, being defeated by the king of Orissa near Solimabad fled to the Portuguese Governor of Hooghly for protection.

Hooghly soon rose to be "the richest, the most flourishing and the most populous" of all the Portuguese settlements in Bengal. By this time the greater portion of the trade in Bengal had passed into the hands of the Portuguese and they had not only settlements in Satgaon, Hooghly and Chittagong but also in other places like Hijli, Banja, Dacca and other small ports. The extent of the Portuguese trade in Hooghly can be guessed from the fact that they paid over 100,000 tangas or Rupees as custom duties to the Mughals.

At the beginning of the seventeenth century the Portuguese power in India began to decline. The Portuguese in Hooghly "instead

of confining their attention to the business of merchants had fortified themselves in that place and were become so insolent that they committed many acts of violence upon the subjects of the empire and presumed to exact duties from all the boats and vessels which passed their factory and had completely drawn away all the commerce from the ancient port of Satgaon, that the Portuguese were in the habit of kidnapping or purchasing poor children and sending them as slaves to other parts of India and that their pirates in consort with the Mughls committed innumerable aggressions on the eastern branch of the Ganges." Such were the causes which induced the Mughal court to take action against them. As a result an expedition was sent against Hooghly in 1632 which the Portuguese tried to resist but they were completely defeated, many were killed, some succeeded in escaping and the rest were taken prisoners to Delhi, and were treated as slaves. In 1633 the Portuguese were permitted to come back to Hooghly but they never regained their former power and political importance.

The Dutch in the meantime had obtained a *farman* from Shah Jahan in 1625 to erect a factory in Hooghly and to trade in Bengal.

The advent of the Dutch and the English.

The Portuguese now found themselves unable to compete with them. After their defeat in 1633 they recovered their trade to a considerable extent and as late as 1660 they were the chief "inhabitants of Hooghly, all of them rich Portuguese for in those days they alone were allowed to deal in salt throughout the province of Bengal." But there were now other competitors on the scene and the British and Dutch had got important commercial concessions which led to the rise and growth of other trading cities to the detriment of Hooghly.

The Dutch established themselves at Chinsurah and the English who were till then trading in Madras and Orissa received a charter from Prince Shuja, the viceroy of Bengal in the middle of the 17th century to carry on their trade in Bengal subject to the payment of Rs. 3,000 per year. Late in the same century the

Circumstances which led to the foundation of Calcutta.

English in Bengal declared war against the Mughal power as a protest against vexatious interference with their trade by the local officers. The English Company's agent Job Charnock ransacked Hooghly in 1686 but on the Nawab of Bengal sending up troops in retaliation Charnock was compelled to leave Hooghly, made a halt at Sutanuti a growing village on the left bank of the Hooghly and demanded compensation. The angry Nawab sent troops again. But eventually he was prevailed upon to accord permission to the English to carry on their trade at Hooghly as before. Next year in September Charnock stopped at Sutanuti again to recruit provisions and spin out the monsoon. Charnock was superseded by Captain Heath at about this time but after a brief withdrawal to Madras he with his council returned to Sutanuti for the third time in 1690, attracted by the generous offer of Rs. 60,000 by way of compensation made by the new Nawab, Ibrahim Khan, "the most famously just and good Nawab of Bengal."

Thus when the Portuguese trade was on the decline and the Dutch trade was still in its infancy the English being temporarily driven out of Hooghly were attracted by the village of Sutanuti and its surroundings. The river Hooghly from early days of European trade was not navigable for larger vessels higher up the Ādi-Gangā (Tolly's Nullah) but lighter craft could transport to Satgaon and other places on either bank of the river the goods which the Portuguese disembarked at Garden Reach. This transshipment probably helped the growth of villages in the neighbourhood of the place of transshipment. After the fall of Hooghly in 1632 the native bankers (Seths) and Basaks came away from Hooghly and settled down in the village of Sutanuti. The villages in its neighbourhood Kalikāttā, and Kalighat are mentioned for the first time towards the end of the 16th century and were apparently not prosperous before the fall of Hooghly which diverted a portion of the native traders to this direction, and helped the growth of the future city of Calcutta.

CHAPTER II

CALCUTTA—ITS RISE AND GROWTH

The name Calcutta has not yet been satisfactorily explained. There are various theories on the origin of this name and a number of explanations of the etymology of the name is current. The most probable theory is that which tries to derive it from the word *Kālikṣetra* (Kālikhetta-Kāliketta-Kalikātā). The name is mentioned as Kalikāttā for the first time by Mukundarama in his *Chandikāvya*. In c. 1590 the *Ain-i-Akbari* refers to Kalikatā as one of the three Mahals (Kalikata wa Bakoya wa Barbakpur). Dr. S. K. Chatterji, who is an expert philologist would explain the name as "the side (*i.e.*, place or depository) of shell-lime for white-washing" (*kali* means shell-lime, *kātā* from *kāt* means side, place). Kalikātā was according to him originally a place where shell-lime used to be deposited for sale.

In 1690 when Job Charnock was offered an asylum at Hooghly by the Nawab he deliberately turned out the latter's offer and decided to settle down in Calcutta. He realised that Calcutta being nearer the sea than Hooghly, not only afforded better facilities for trade but also for withdrawal into safety in case of defeat. Its situation on the eastern bank of the river rendered it strategically more secure from attacks by Mahrattas and Mughals. The place was free from political intrigues current in Hooghly. Yet Calcutta was not then a howling wilderness. The Seths and the Basaks had already set themselves up. The pilgrim's road leading to Kali's temple (modern Chowringhee with its northern and southern extensions) provided as good a communication with the interior as was possible in those days. Provisions were plentiful and the soil

fertile. On the east it was protected from invasion by an extensive salt lake. Besides large vessels could reach up to it and no transshipment was necessary. The only difficulty was that the place was swampy and unhealthy.

All this is not merely an after-thought. Charnock seems to have meditated on these manifold advantages of Calcutta under the spreading peepul tree which stood at the junction of the Bowbazar Street with Lower Circular Road when in common with other European traders he halted on his way to Hooghly. It was the favourite Baitakkhana or rendezvous of all traders where they enjoyed their hookkahs in a leisurely way in those leisurely days. The historic tree stood there throughout the eighteenth century but was removed as late as 1820 under orders of the Marquess of Hastings in connection with his plans for the improvement of the city.

In 1690 Job Charnock issued a proclamation inviting various nationalities to come and settle in the Company's zemindaries—the three villages of Sutanuti, Calcutta and Govindpur.

**Proclamation of
Charnock—the
first settlers of
Calcutta.**

He gave them special immunities and offered advantages to induce them to establish themselves in the new settlement. The Portuguese, the Armenians the Hindus, the Moslems and other nationalities began to come. Prior to

the days of Job Charnock the Armenians had formed a small commercial settlement in the village of Sutanuti. Many responded to the overtures of Charnock and congregated at the northern extremity of the settlement. The Portuguese and the Armenians came from Chinsurah. The Armenians specially proved themselves very useful to the British, and afforded an excellent medium through which the English reached the native markets. They enjoyed the privileges of citizens, and several of them rose to positions of wealth and influence.

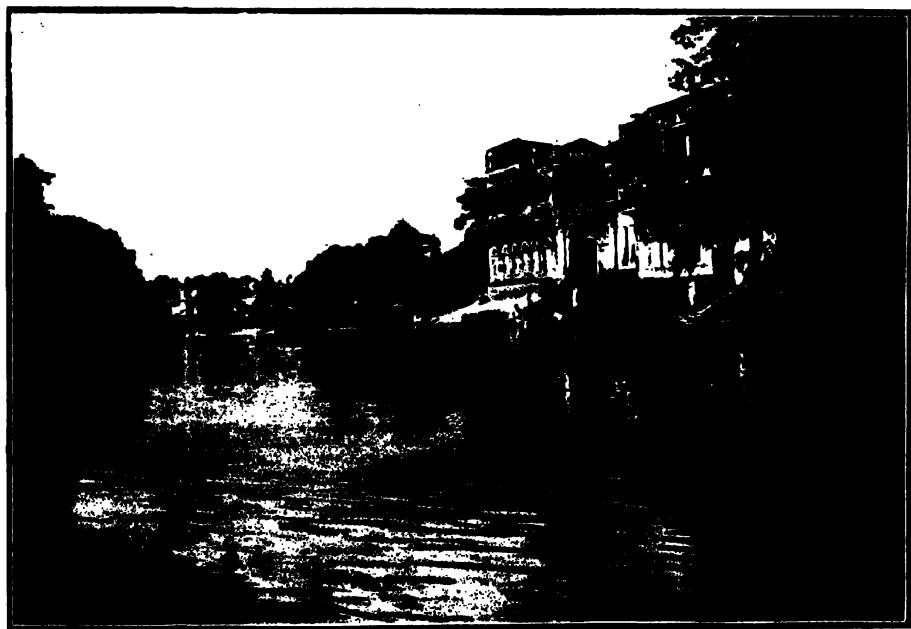
Thus the establishment of the English factory at Calcutta or more precisely at Sutanuti was a deliberate act on the part of Charnock.

**Calcutta under
Charnock.**

Since its foundation Charnock became the first Governor of the establishment. But as a Governor he gradually grew into an irresponsible autocrat. He "reigned more absolutely than a Raja, only he wanted



KALI TEMPLE, KALIGHAT



KALIGHAT, RIVER-SIDE

much of their humanity, for when any poor ignorant native transgressed his laws they were sure to undergo a severe whipping for penalty and the execution was generally done when he was at dinner, so near his dining room that the groans and cries of the poor delinquents served him for music." He died on January 10, 1692 and was buried by the grave of his wife who was an Indian. His son-in-law Charles Eyre erected a mausoleum over the tomb which is still to be found in St. John's Church-yard although not in its original form.

Charnock was succeeded by his second in command, Ellis, a man of little character and ability. Although an Imperial order had been obtained as early as 1691 permitting the English to "contentedly continue their trade" on payment of Rs. 3,000 a year by way of all dues yet nothing had been done to clear jungles, construct roads or build houses. The early traders lived either in mud hovels or in the cabins or forecastles of their ships or worse still in small country boats in the stifling heat and torrential rains of Calcutta. Charles Eyre who now became the Agent was a man of commanding personality and character full of initiative and enterprise. Within a few months of his assumption of office the Agent's cutcha house caught fire and was promptly rebuilt of brick. But being considered to be at "a considerable distance from the factory, it was disposed of by outcry and fetched Rs. 575/-." On June 25, 1695 a severe storm blew down many of the houses erected by Eyre, notably the "lodging rooms" for the servants of the John Company.

Eyre's administration is chiefly noted for the commencement of the Old Fort. Shova Singh, the chief of Chatwa-Barda in Midnapur revolted and seized Hooghly and Murshidabad and prepared to advance on Sutanuti. The Nawab was obliged to accord the long-delayed permission to the English "to defend themselves". As early as 1693 Sir John Goldsborough had selected a site for a factory and had enclosed it with a mud wall. The spot chosen was the highest piece of ground on the bank of the river which then flowed much further east than now, the present Strand Road then being part of the river bed. The actual site is now occupied by the General Post

Office, the Customs House and the East India Railway House. Fortifications were hurriedly run up and continued even after the withdrawal of Shova Singh. By January 1697 a bastion and a walled enclosure were completed and ten guns were ordered from Madras.

Apart from this tangible benefit the Company derived another and infinitely more valuable advantage from Shova Singh's rebellion. The people saw the whole countryside to the west of the Hooghly pillaged by the rebels who were however kept at a safe distance from Calcutta. Charnock's choice was thus more than justified by this incident. Bankers, traders, manufacturers began to come to Calcutta as to a safe haven in those stormy times.

In August 1698 Prince Azim-us-shan, the Governor of Bengal, accepted Rs. 16,000 from the English and granted them the eagerly

The Nawab's concession to the English. sought permission to buy from their proprietors the three villages of Govindapur, Sutanuti and Calcutta in full ownership. Though the permission was costly the properties were bought for a nominal price. The three villages were purchased for a sum of Rs. 1,300 and their ownership was transferred to the English by a *bainama* or deed of sale dated the 10th November, 1698 and their former owners "sold and made true and legal conveyance of the villages Dihi Kalkatah and Sutanuti.....and the village Govindapur.....to the English Company with rents and uncultivated lands and ponds and dues from resident artisans together with the lands appertaining thereto bounded by the accustomed notorious and usual boundaries."

Charles Eyre after receiving his knighthood in England returned to the settlement as its first President in 1700. He had instructions

New buildings. to build a fort to be named after William III. When the fort was first constructed in 1697 it had only one bastion and that simply a square tower with thick walls constructed so as "to look like a warehouse for fear of exciting the jealousy of the Mogul". The settlement therefore had to be further fortified.

Two years after the arrival of the first President, in 1702, the President's house was commenced and the Union Jack was hoisted. It took four years to complete the President's house which was

described as "the best and the most regular piece of architecture in India". In 1706 the old factory house was pulled down and in its place was erected a single-storied house for the servants of the Company—the first "Writers' Buildings". But it was not till after the death of Aurangzeb in 1707 that the English had any real opportunity of fortifying the settlement. Amidst the general insecurity then prevailing they hastily put up two more bastions on the river side. By this time the other European merchants had built their houses on the eastern side of the fort, the western side being lapped by the Hooghly. The pivot of the settlement was "The Green before the Fort" now called Lal Dighi by Indians and Dalhousie Square by Europeans. It was then a dirty pond full of weeds but was deepened into a much needed reservoir of water in 1709. During the same year the Church of St. Anne was erected partly by State grant and partly by public subscription. In the next year a wharf was commenced before the fort, faced with brick and with a breastwork for cannon.

An embassy was sent from Bengal by the English to Delhi where it arrived on July 8, 1715, with presents to the value of £30,000 but it was not until January next year that the English agents could secure permission to see the Emperor. Even then the mission might have been unsuccessful had not Surgeon Hamilton of the embassy been permitted to attend the Emperor in his illness and restore him to health. At all events the English were granted the long desired *farman* but not till after a tedious delay of two long years. Surgeon Hamilton died on December 4, 1717 shortly after his successful return. His memory was perpetuated in the tombstone of Hamilton within the Charnock mausoleum for the great service rendered by him to the cause of the English in Bengal.

The *farman* secured by Hamilton authorised the English to purchase 38 villages contiguous to the three villages of Govindpur, Sutanuti and Calcutta. Round these as a nucleus grew up a city providing the utmost freedom and security in those troublous times. The land actually occupied was about 2000 acres and in ten years'

Further concessions to the English.

time the shipping amounted to ten thousand tons per annum. "The city increased yearly in wealth, beauty and riches".

The first check to the progress of Calcutta was offered by the terrible storm of September 30, 1737. According to a contemporary account, fifteen inches of rain fell in five hours which together with

the violent earthquake, threw down most of the

Mahratta Ditch. buildings including the Church of St. Anne.

Another calamity befell the city five years later when the Mahrattas invaded Bengal, laying waste the entire countryside to the west of the river Hooghly. The English obtained the permission of the Nawab "to dig an entrenchment round their territory". This work had it been completed would have extended seven miles. In six months three miles of it were finished when the inhabitants finding that the Mahrattas did not approach Calcutta desisted from their works." The original scheme was to plant seven batteries in different parts of the town which was actually done. The Ditch was an after-thought and as stated above merely half finished. The line of the ditch remains in the present Circular Road although all traces of the batteries have vanished. And even temporary settlers in Calcutta still call themselves "Ditchers".

Of infinitely greater consequence of Calcutta and indeed to all India was the growing tension between the English and the young

Nawab Siraj-ud-Dowla who ascended the throne in

Troubles with 1756. The latter looked with misgiving on the
the Nawab. fortifications which were being put up at Calcutta.

But his resentment broke into open hostility when the English refused to deliver up to him the son of his Dacca Governor, who had fled with all his father's treasures to Calcutta to evade paying the Government dues to the Nawab. The English applied for help to the factories at Chandernagore and Chinsurah. But as no reinforcements arrived they prepared unaided to defend themselves. They armed all the Europeans, native Portuguese, Armenians and 1500 Hindu matchlockmen. Even the chaplain was enrolled as a "Captain-Lieutenant". A store of grain and other provisions was laid in. Some fortifications were hurriedly run up, as far as the shortness of time permitted.

Calcutta was attacked on June 16, 1756. The Nawab's army reached Chitpore where it was repulsed by the battery of the Bagh-bazar outpost. Emboldened by the enemy's retreat to Dum Dum the English burnt the bazar in front and to the south of the Fort on the next day. But on the 18th the Nawab's army reappeared in great force and drove in the English outposts after severe fighting near the present British Indian Street, still called *Ranimuddi Gully*. The Church and the buildings commanding the Fort were abandoned. Heavy guns were at once mounted on the roofs by the Nawab's army and there was a fusillade of fire on the Fort.

A Council of War was now held, for the position was desperate. It was decided to send the women and children on board the vessels lying off the Fort. And the entire night was spent in making preparations for meeting the storming of the Fort which was regarded as inevitable. The governor Drake and others fled declaring that the rout was general. The command now fell on a man called Holwell who with his little garrison continued the defence in a most valiant manner. After two days' fight the army of the Nawab was in possession of the Fort. All the treasures of the Fort however had already

The myth of the Black-Hole Tragedy. been removed on board the vessels. It was at this time the so-called Black Hole Tragedy is said to have happened. It is said that after the occupation of the Fort the English captives were left free and in comfort at first but when some soldiers being drunk began to assault the Indians the Nawab's guards put them into the Fort prison which was called the Black Hole, a small cubicle 18 ft. by 14 ft. 10 inches, with two small grated windows. The story runs that 146 prisoners were imprisoned in this room and when on the next morning the door was opened only twenty-three were found to be surviving. It is not however physically possible to cram 146 persons in such a small room. There are besides other reasons for which the story of the Tragedy has been discarded as historically untrue.

Before leaving for Murshidabad the Nawab changed the name of Calcutta to Alinagore and appointed a Governor who had his seat

about three miles to the south of the Fort which was called then as now Alipur. Some of the buildings were demolished, the survivors were set at liberty and only Holwell and three others were taken as prisoners to Murshidabad.

Name of Calcutta changed by the Nawab.

When the news of the fall of Calcutta on the 20th June reached Madras an avenging army was sent under Clive and Watson. They reached Fulta on December 20, 1756. Clive's troops landed on the east bank and easily captured the fortress at Budge-Budge on the way. Admiral Watson sailed up and at his approach the Nawab's garrison speedily evacuated the Fort. On January 2, 1757 the British flag was rehoisted at Fort William. A "consulation" on that day declared the President and Council once more in possession. Clive first removed the neighbouring buildings which commanded the Fort, a moat 30 ft. wide and 12 ft. deep was dug round the Fort and other defences were also raised. On February 9 a treaty was concluded with the Nawab not only restoring the *status quo ante* but with some added privileges.

Calcutta retaken—a Treaty with the Nawab.

In the meantime war having broken out between England and France Clive and Watson captured Chandernagore. An open rupture followed between the English and the Nawab who regarded the French as his allies. Clive wrote a strong letter demanding satisfaction for all past wrongs. The Nawab's reply was an immediate advance of his army. Clive also set his army in motion, making a halt at Katwa till June 22, partly on account of a severe storm and partly to get some authentic news from the Court at Murshidabad before embarking on his desperate enterprise.

From the moment of the retaking of Calcutta there were intriguers at Murshidabad who wished to depose Siraj-ud-Dowla and set up his uncle Mir Jaffer with the aid of the English. Clive decided to take advantage of the intrigue and replace Siraj-ud-Dowla by Mir Jaffer. Mir Jaffer accordingly executed a treaty with the British. Now as soon as a reassuring letter came from Mir Jaffer who solemnly promised to abide by his treachery Clive crossed the Ganges and reached the field of Plassey.

Battle of Plassey.

on June 23, 1756. The plan of intriguers succeeded and the battle of Plassey was won without much fight.

As soon as Mir Jaffer ascended the throne he gave Zemindary rights to the English and his deed contained this remarkable sentence :

**Zemindary
rights to the
English.**

“Know this ye Zemindars, . . . and others settled in Bengal, . . . that ye are dependents of the Company and that ye must submit to such treatment as they give you, whether good or bad, and this is by express injunction”. Lavish compensation was awarded to the Company and its officers, a portion of which was utilised in rebuilding the city, constructing a new Fort, a mint and other public buildings. Presents were heaped on Clive. The huge economic drain on the country known as the Plassey drain which continued from 1757 to 1780 amounted to, according to the latest calculation, not less than £38,000,000. It must be remembered in this connection that the purchasing power of money was then at least five times as high as now.

The victory contributed to the growth of Calcutta. The English were now the real king-makers in Bengal and they were in power with-

**The growth
of Calcutta
under Clive.**

out responsibility. Under such conditions Calcutta, which was their headquarters prospered beyond measure. Splendid country houses sprang up in the suburbs, one at Dum Dum for Clive, another at Alipur for Hastings connected with Calcutta by a bridge across Tolley's Nullah and quite a number on the banks of the Hooghly giving the locality its name of Garden Reach. But the city was still an agglomeration of palaces and hovels. A contemporary writer says : “The appearance of the best houses in Calcutta is spoiled by the little straw huts and such sort of encumbrances which are built up by the servants for themselves to sleep in, so that all the English part of the town is a confusion of very superb and very shoddy houses, dead walls, straw huts, war houses and I know not what”.

During the tenure of office by Hastings both as Governor and Governor-General the city of Calcutta had a systematic growth. As

**Calcutta
under Hastings.**

President of the Building Committee of St. John's Church-yard he not only secured a free gift of land from Maharaja Nabokissen but also gave a liberal

state aid and permitted certain unauthorised diversion of state monies. It was under his auspices that the Asiatic Society of Bengal came to be founded in 1784. He was in fact elected the first President, "but with excellent taste and feeling, he declined the honour in favour of Sir William Jones". The seeds of the Royal Botanic Garden at Sibpur were also laid during his regime, both literally and metaphorically. It was in this garden that Colonel Kyd made his earliest experiments with the transplanation of foreign plants into Bengal, which ultimately set up one of Bengal's greatest industries, the tea industry. During the rule of Hastings the administration came to be centralised more and more in Calcutta. He might not have had anything to do with the setting up of the Supreme Court, but it was he who removed the *Khalsa* or Exchequer, from Murshidabad to Calcutta. It was he again who abolished the five Provincial Revenue Councils at Burdwan, Dacca, Dinajpur, Murshidabad and Patna and set up the Committee of Revenue in Calcutta.

The administration of Cornwallis was mainly one of consolidation. He carried out many of the measures initiated by Hastings, who, had not like Cornwallis the power of overriding his Council. Lord Wellesley initiated a long programme of Civic reform in 1803. The City by this time had considerably grown and it was necessary to make some permanent arrangement for civic administration.

Lord Valentia who visited Calcutta in 1803 has left the following account of the improvements effected by Wellesley. "The town of Calcutta in 1803. Calcutta is at present well worthy of being the Seat of our Indian Government, both from its size and from the magnificent buildings which decorate the part of it inhabited by Europeans. The citadel of Fort William is a very fine work, but greatly too large for defence. The Esplanade leaves a grand opening, on the edge of which is placed the new Government House, erected by Lord Wellesley, a noble structure, although not without faults in the architecture and upon the whole not unworthy of its destination.

On a line with this edifice is a range of excellent houses, chunamed and ornamented with verandahs. Chowringhee, an entire village of palaces, runs for a considerable length at right angles with it and

altogether forms the finest view beheld in any city." The Indian quarter in those days however was less imposing and about it Lord Valentia says : "The Black Town (i.e., the Indian quarter) is as complete a contrast to this as can be well conceived. Its streets are narrow and dirty, the houses of two stories, occasionally brick and generally mud, and thatched, perfectly resembling the cabins of the poorest class in Ireland".

From this time on the progress of Calcutta is continuous. In 1813 the new charter of the Company abolished its monopoly and permitted other people to trade in India side by side with the Company on equal terms. The result was increased trade and prosperity to Calcutta. But this was completely eclipsed during the crisis of 1830-1834 when five of the great Agency Houses failed. Another crash came in 1847 when the Union Bank failed with huge commitments in the most disgraceful circumstances imaginable. A contemporary English writer was constrained to make the following remark : "The commercial morality of Calcutta is a bye-word in every Chamber of Commerce in Europe. There is almost a total bankruptcy of character". But it should be admitted that the development of the city of Calcutta was mainly due to these merchant princes and banking houses.

The Town Hall, begun in 1805, was completed in 1813. During this latter year was also created the Bishopric of Calcutta although the first Bishop, Middleton, was not enthroned in St. John's till a year later. The foundation stone of St. Paul's was laid in 1839 and the Cathedral was consecrated in 1847. In 1831 was opened the new Mint, or the Silver Mint, the Copper Mint not being started till 1865. At about this time the Calcutta Trades Association, the oldest body in Calcutta came to be founded, the incorporation under the Companies Act taking place nearly half a century later in 1882. The Calcutta Chamber of Commerce, the progenitor of the Bengal Chamber of Commerce, was constituted in 1834, but not on the present site which is associated with the memory of Clive and Francis. The two Misses Eden, the talented sisters of Lord Auckland, started the famous Gardens bearing their name at about this time.

During the Viceroyalty of Lord Curzon a fresh impetus was given

to the growth of the City. At the instance of Lord Curzon the Victoria Memorial Hall was started and it is without doubt the most magnificent building erected in India in modern times.

The Port Commissioners were instituted in 1870 and the modern improvements of the Port have been mostly effected by this body. They control the docks and Jetties and many landing stages or ghats. They also run an efficient Ferry Service to many important places in and out of Calcutta and Howrah. The Ferry Service carries over 10 million passengers annually.

Other bodies both official and non-official have contributed to the development of the city in many ways in recent years. The Calcutta Improvement Trust was formed in January 1912.

Development by The Improvement Trust. The idea was to make arrangements for undertaking, on a large and long-drawn-out scale the improvement of the city by opening up congested areas, laying out or improving roads, providing open spaces as "Lungs" of the City, creating good and cheap housing for the poor, carrying Calcutta's limits farther afield by road building etc.

The Trust has done very good work since its inauguration. It is remarkable how they have "changed the face" of Calcutta by laying out broad streets like the Central Avenue (now called the Chittaranjan Avenue), New Park Street, New Theatre Road, Russa Road Extension, the Ballygunge Avenue (called the Rashbehari Avenue) etc. They have also given Calcutta many new Parks and demolished many a hotbed of congestion, dirt and disease. In the Southern part of the City near Dhakuria an extensive lake has been excavated. It is now the greatest place of attraction for the citizens of Calcutta. The Improvement Trust within a short span of time has changed the appearance of the City to a great deal; it has not only beautified the city in several respects but has helped the extension of the city southwards and northwards. It has besides by providing the city with some big parks and the lake helped the growth of new sporting, rowing and swimming clubs, both European and Indian.

A few other public bodies like the Hindusthan Co-operative Insur-

ance Society Ltd. have contributed to the development of the city to a limited extent. They have in recent years developed lands in the southern section of the city in Ballygunge area and thus helped the growth of large residential areas.

Thus the transfer of the capital of India to Delhi has not in any way impaired the importance of Calcutta as a centre of great activities. Her greatness is still present and indeed omnipresent. She has attained her present position gradually through a continuous struggle of over two centuries. She can now justly point with pride to the solid contributions which her sons, whether by birth or adoption, have made to the art, literature, science, politics, commerce and industry of the entire country and to their leadership of thought. In the next few chapters we shall try to delineate their activities in these various departments of life and thought.

APPENDIX

The 38 villages which the English Company were permitted by the Mughal Emperor to buy from the Zemindars in 1717 :—

- I. On the Howrah side of the river:
 1. Salica (Salkeah).
 2. Harirah (Howrah).
 3. Cassundeah (Kasundiah).
 4. Ramkissnopoor (Ramkristopur).
 5. Batter (Betor, modern Bantra).
- II. On the Calcutta side of the river:
 6. Dackney Packparra (Dakshin Paikpara).
 7. Belgeshia (Belgacchia).
 8. Dackney Dand (Daksindaree).
 9. Hogulchundey (Hogulkuria).
 10. Ultadang (Ultadinghi).
 11. Similiah (Simla).

12. Macond (Makonda).
13. Camorparrah (Kamarpara).
14. Cancergasoiah (Kankurgachhi).
15. Bagmarrey (Bagmari).
16. Arcooly (Arkuli).
17. Misrapoor (Mirzapur).
18. Sealda (Sealdah).
19. Cooliah (Kuliah).
20. Tangarah (Tengra).
21. Sundah (Surah).
22. Bad Sundah (Bahir Surah).
23. Shekparra (Sheikhpara).
24. Doland (Dalanda).
25. Bergey (Birji).
26. Tiltola (Tiljula).
27. Tpiaah (Topsia).
28. Sapgassey (Saggachhi).
29. Chobogah (Chowbagah).
30. Cherangy (Chowringhee).
31. Colimba (Colinga).
32. Goborah (Gobra).
33. Badokney Dand (Bahir Dakshin daree).
34. Sicampur (Serampore).
35. Jola Colimba (Jala Colinga).
36. Gandalparah (Gondolpara).
37. Hintaley (Entally).
38. Chittpoor (Chitpur).

CHAPTER III

THE MUNICIPAL ADMINISTRATION—ITS EVOLUTION AND PRESENT STATE.

We have seen that Calcutta with its neighbouring villages of Sutanuti and Govindpur did not take long to grow into a populous town. The territory over which the Company assumed control at first was about 1692 acres of land comprising roughly the land between the river and the salt lakes, from Govindpur to Sutanuti. Even in 1752 some lands within the Company's bounds like districts of Simla, Mallanga, Mirzapore and Hogulkuria were still held by private proprietors. For the purposes of administration, the Company split up its territory into four divisions, of which the largest was the central one called Dihi Calcutta. The old Fort and the Company's offices were situated in this part. It centred round the great tank (Dalhousie Square). The other divisions were Sutanuti in the north, Govindpur in the south and Barrabazar, all of which had grown into populous settlements. In 1742 the township of Calcutta was limited and defined by the new ditch called the Mahratta Ditch. In the treaty of 1757 the Company was given possession of all lands within the ditch. With the acquisition of zemindari right within this limit the town expanded and included the suburban area which lay outside it. Thus a number of *mouzas* Hogulkuria, Simla, Tuntuneah, Arcooly, Mallanga, Dinabhanga, Collinga, Taltola, Birjee, and Ooltadinga became part of the town. Since that time the boundaries of the town extended further through the annexation of certain portions of land from the 24 Perganas adjoining Calcutta.

The boundaries of Calcutta in 1779 have been described as follows: 'Kidderpore is a village about two miles from the Court House, lying close to a small river commonly called by the English Kidderpore Nullah. This river is the boundary southward of the town of Calcutta, of which the river, commonly called the Hooghly river, is

**Boundaries of
Calcutta in 1779.**

the boundary north-westward, and the Marhatta Ditch which exists in many parts and the line where it once was in other places, are the boundaries north-eastward, eastward and south-eastward, to the place where that ditch or line, where it existed, meets the Kidderpore Nullah and from that place the rivulet is the boundary. This rivulet was a little to the west of the new Fort, which is considered as within the town of Calcutta". Till 1840 these boundaries did not possibly undergo any change but since then extensive changes have been made. The present boundaries of Calcutta can be delineated as follows :

North and East: Circular Canal, Pagladanga Road, South Tangra, and Topsia Road, E. B. Railway line.

South: E. B. Railway line, Russa Road, Tollygunge, Circular Road, Goragatchia Road, up to Nimakmehal Ghat.

West: The Hooghly river.

The Municipal area of Calcutta is at present about $31\frac{1}{2}$ square miles but including the Fort William, the Maidan, the Port and the Canals the whole area would be something like 45 square miles. The population of the municipal area according to the Census of 1931 is 11,58,044. The entire population of Calcutta including that of the Fort William and the Port is about 11,96,734 and including that of the South Suburban area, Tollygunge and Howrah it is nearly 17,33,927. The total population of the city in 1921 was only 9,07,851 and in 1872 when the first Census was taken it was 6,33,009. These figures clearly show with what great rapidity the City has grown.

Along with the growth of the city the Government had to make arrangement for the municipal administration. At first the adminis-

The beginning of Municipal administration. tration was entrusted to one of the civil servants of the Company who was called the "Zemindar" and later the "Collector" of Calcutta. Under a Royal Charter issued in 1727 a Corporation consisting of a Mayor and nine aldermen, with a Mayor's Court, was established of which Holwell, the famous 'Zemindar' or Collector of Calcutta, afterwards became the president. The Mayor's Court was given civil,

criminal and ecclesiastical jurisdiction over British inhabitants and dispensed a kind of rough and ready justice, according to broad principles of equity. A tax was levied on the inhabitants of Calcutta for the construction of a town hall or court house to accommodate the mayor and his court. The building was erected in 1729 on the site now occupied by St. Andrew's Church.

Meanwhile the Corporation did not do much to improve its administration. A new Royal Charter was granted in 1753. The Mayor's Court was re-established and an ineffectual attempt was made to organise a municipal fund by the "levy of a house tax of two or three lakhs of rupees, to defray the expense of cleansing and ornamenting the place internally". Revenue accruing from other sources like ground rent, toll etc. was partly used for maintaining 'an undisciplined battalion of thanadars and peons, constituting the only established guard or night watch of the city'.

In spite of the orders of the authorities to the 'Zemindar' or Collector 'to make drains sweet and wholesome' and to cut down the jungle in and about the town little improvement in the sanitary conditions were effected. The ditch to the east of the old Fort was not filled up till 1766 nor the Mahratta Ditch till 1780, though both had been the dumping grounds for all the filth and garbage of the city. In 1790 the public drains were still the natural receptacles for all refuses and filth and carcasses were left to rot and putrefy in the streets. Thus the city was then in fact 'little better than an undrained swamp, surrounded by malarious jungle and pervaded by a pestilential miasma'.

The need for drastic measures was soon felt by the authorities. In 1794 under the statute Geo. III the collector was relieved of his municipal duties and the Governor-General took powers to appoint Justices of the Peace for the municipal administration of the town, with authority to make regular assessments and to levy rates. The Justices set to work at once to improve the town. The Circular Road began to be metalled in 1799. In 1801 tenders were invited

for the supply of 85 pairs of bullocks for conservancy purposes. But the work of improvement was of such a magnitude that it was already outside the resources of Justices.

In 1803 Lord Wellesley inaugurated a long series of Civic reforms which were executed during the next thirty years first by the Improvement Committee and subsequently by the Lottery Committee constituted in 1817. The Improvement Committee bore a similar relation to the Justices as the Improvement Trust bears to the Corporation at present. This Committee was superseded by the Lottery Commissioners in 1814 and eventually in 1817 by the Lottery Committee. In the order of the Government "it was laid down that the Lottery Fund should be considered applicable to the expense of excavating new tanks and filling up old ones, of opening new streets or roads, of constructing aqueducts, bridges, ghauts, and other similar works calculated to improve the health, convenience, and comfort of the inhabitants of the city and suburbs, but not to the keeping in repair streets, roads, drains or other works alluded to when finished and that generally speaking, no expense should be charged to the fund which could properly be included in the assessment department".

The corporate control of the Justices gradually gave way to the concentration of authority in the hands of the Chief Magistrate. There were at one time seven Justices or Magistrates, but their number was subsequently reduced to five, including the Chief Magistrate. The Chief Magistrate derived his authority from the Government and not from the people and local taxation was still almost an untried principle. In spite of the great works which the proceeds of the Lotteries had served to finance, Calcutta after forty years of the Justices was still in an unsatisfactory condition. Local taxation was still almost an untried principle.

In 1833, therefore, the first proposal for an experiment in representative government was made. It was suggested that "municipal Committees" should be elected by rate-payers of a certain qualification in each of the four divisions into which the town was then divided. The Committees were to be of an advisory character and

**Experiment
in representative
Govt, 1833.**

may be regarded as an adumbration of the modern District Committees. They were to consist of seven or nine members, the Chief Magistrate and the Divisional Magistrate being members *ex officio*. The scheme was not however well received.

In 1836 Lord Auckland appointed the *Fever Hospital and Municipal Improvements Committee*. The final instalment of its report was not issued until 1847 and it succeeded in riveting the attention of all men on the importance of the standing municipal problems. The Committee pointed out that the prevalence of fever in Calcutta was due to the defective drainage system. It recommended the establishment of a great central hospital and additional dispensaries. Besides it devoted some attention to town-planning and advocated the construction of more thoroughfares, pressed for the excavation of large tanks or reservoirs to supplement the water supply. The defects of conservancy in congested parts of the town were laid bare and the details of the administration were scrutinised. It further recommended the establishment of police both for the town and the river and great economies in regard to Magistracy, the excise, collection and Assessment departments. It analysed the question of finance and made recommendations in regard to taxation.

The immediate outcome of the Committee's labours was the Act XXIV of 1840 which empowered the Government, on the application of two-thirds of the rate-payers in any of the divisions of the town to entrust to them the assessment, collection and management of the rates of their division. Under Act XVI of 1847 a further attempt at local self-government was made. The Act transferred the conservancy functions of the Justices to a Board of Seven Commissioners of whom three were to be appointed by Government and one elected by the rate-payers for each division of the town. A number of Acts passed during the successive years vested larger powers in the Commissioners.

It was however believed that the most suitable form of government for Calcutta was one which combined popular representation with the concentration of executive power in the hands of a highly paid officer. A new Bill was

**The Act of
1863.**

accordingly framed which became the Act of 1863. According to it the general control of municipal expenditure was vested in a large body of councillors, while the execution in detail of all sanctioned works was entrusted to a well paid whole-time officer. Under the new Act the Corporation came to consist of all Justices of Peace for Bengal, Bihar and Orissa who might be resident in Calcutta along with the Justices of Peace for the town. The appointment of their Chairman rested with the Government.

The constitution with a large number of Justices and a Chairman who could work if he was able to exercise a strong personal influence over these Justices was a clumsy and unworkable

**The clumsy
constitution.**

one. Therefore another Act was passed in 1876 (Act IV) which introduced the elective principle.

According to it two-thirds of the Commissioners who numbered 72 exclusive of the Chairman and the Vice-Chairman had to be elected by the rate-payers and the remainder being appointed by the local government. The electoral divisions were to correspond with the thanas or police divisions which were termed *wards*. The appointment of the Chairman, Vice-Chairman and other officers as well as of Committees was governed by provisions almost identical with those contained in Act VI of 1863.

It was soon discovered that a large deliberative body could not advantageously deal with details of business which it was required to superintend. In 1877 a Committee which had no statutory sanction was appointed under the name of the Town Council in which were merged the Finance, Roads, Conservancy and Water Supply Committees. As this innovation proved a success it was soon given a legal status.

Having regard to the recommendations made by a Commission appointed in 1884 the Government passed a new Bill (Act of 1888) which introduced certain important changes in the previous constitution. In the first place it increased

**The Commission
of 1884.**

the number of Commissioners to 75 of which 15 had to be appointed by the local Government, 50 to be elected by the ratepayers (2 by each of the 25 wards into which the enlarged municipality was divided), 4 to be selected by the Bengal Chamber of

Commerce, 4 by the Trades Association and 2 by the Port Commissioners. In the second place the Town Council was reconstituted as the General Committee consisting of 18 members of whom 12 were to be chosen by the elected Commissioners and 6 by the nominated ones. It was made the 'Budget and Finance Committee' of the Corporation with power to deal with any other business that might be referred to it. The Chairman and the Vice-Chairman were to be ex officio members of the Committee.

An amending Act however came into force in 1899 (Act III) inspite of the great opposition of the influential Commissioners of the Corporation who even declined to take part in the administration of the new Act. This Act reduced the number of Commissioners to 50 of whom 25 only were to be elected at ward elections and the remainder being appointed partly by the Government and partly by the Bengal Chamber of Commerce, the Calcutta Trades Association and the Port Commissioners. The Act provides for three co-ordinate municipal authorities the Corporation, the General Committee and the Chairman. During the life of this Act there was considerable municipal progress and expansion. Its provisions "controlled the execution of great and notable works and permitted the assumption of new responsibilities involved in the modern conception of municipal government."

The Act of 1899.

THE PRESENT CORPORATION.

The present Corporation came to be constituted under the Calcutta Municipal Act of 1923. The previous enactments were repealed by it and it provided for greater popular representation. Under this Act the scope of municipal administration extended further with the inclusion of "area added to Calcutta" namely: (i) the Maniktala Municipality, (ii) the Cossipur-Chitpur Municipality, (iii) the Garden Reach Municipality (iv) the new Dock extension area vested in the Commissioners of the Port of Calcutta and (v) that portion of the Tollygunge Municipality which comprises the Ballygunj Pumping Station and the High Level Outfall Sewer.

The Act of 1923.

The Corporation came to consist of seventy-five elected Council-
 lers, ten Councillors appointed by the Local Government and five
 Alderman elected by the Councillors. For the
The Corporation. purposes of the election of the Councillors Calcutta
 with the added area was divided into 32
 General Constituencies which are territorial and which have to elect
 63 Councillors out of which 15 seats are reserved for Muhammadans.
 Besides these General Constituencies there are three Special Consti-
 tuencies namely the Bengal Chamber of Commerce, Calcutta Trades
 Association and the Calcutta Port Commissioners which are to
 be represented by six, four and two Councillors respectively. The
 ten Councillors are appointed by the Local Government in order "to
 secure the association in the municipal administration of persons
 specially fitted in the opinion of the Local Government for appoint-
 ment as Councillors" and "to secure the representation of minorities
 including the backward and labouring classes". The five Aldermen
 are elected at a meeting of the elected and appointed Councillors held
 shortly after the general election. At the first meeting in each year
 they elect two of their number to be Mayor and Deputy Mayor. For
 the purposes of the election all persons who own or occupy or reside
 in any premises or exercise any profession, trade or calling within the
 general constituencies are qualified as electors.

It is the Corporation which appoint its officers—the Chief Execu-
 tive Officer, Chief Engineer, Chief Accountant,
The Chief Health Officer and Secretary. The Executive
Executive-Officer. Officer is the principal executive Officer of the
 Corporation and all other officers and servants of
 the Corporation are subordinate to him. The Corporation exercises a
 general control over the functions of all the officers appointed by it.

The Corporation each year appoint a number of Standing Com-
 mittees and the District Committees to which it refers for enquiry and
 report and delegate specific functions. One of
The Standing these Standing Committees is the Primary Educa-
Committees. tion Standing Committee which advises the Corpo-
 ration in regard to all matters relating to Primary
 education in Calcutta.

The Corporation is entitled to a consolidated rate on lands and houses within the boundaries of the area administered by it and also to taxes on carriages, Dogs, professions, trades and callings, petroleum, carts etc. The Corporation has also the power to raise loans by the issue of debentures or otherwise for the construction of works, for the acquisition of lands or for any other purposes provided for in the Act.

The consolidated rate.

In the matters of raising loans or for carrying out projects which may entail an expenditure of two and a half lakhs of rupees or more the previous sanction of the Local Government is necessary. The Government also reserves such other rights which may be exercised only in cases of emergency. Generally speaking the Calcutta Corporation has become, since 1923, a completely autonomous body constituted of the representatives of the ratepayers of the City.

The control of the Local Govt.

In 1933 the Government however thought it fit to introduce some important amendments to the Act of 1923. According to these amendments a new constituency with portions of Ward 22 (Bhowanipur) and Kalighat has been created and this constituency has been called Ward 22-A. The number of Councillors was raised to 81 from 75 and the six additional seats were allotted to some of the constituencies of which the representation was considered to be insufficient.

The Amending Act of 1933—the new powers of the Govt.

Another change which came into effect on the 16th November 1933 was introduced by passing the Calcutta Municipal Amendment Act XI of 1933 whereby the Corporation is prohibited from appointing, except with the previous sanction of the Government a person as a municipal officer or servant if he has been convicted of an offence against the State or has been sentenced to imprisonment for a term of three months or more, or from making a grant knowingly to any institution which has after the commencement of the Amendment Act taken into employment any person or to any person who has been similarly convicted or sentenced. The Act further provides for the dismissal of a municipal officer or servant who after the commencement of the Act is convicted of an offence against the State.

The Government has vested the auditors with very wide powers viz., to disallow any item of account contrary to law and surcharge the same on the person making or authorising the making of illegal payment and also to charge against any person accounting any deficiency or loss incurred by his negligence or misconduct. It has been provided that such of the Councillors or Aldermen as will vote for a motion or resolution authorising a payment held by the auditors to be illegal shall be held jointly or severally responsible for the same.

The passing of these amendments of the Municipal Act of 1923 was not quite smooth and a large number of sitting Councillors greatly resented this assumption of wide powers by the Government.

The revenue of the Corporation in 1900-1901 was only 54,34,000 but during the last thirty-two years it has gradually increased and the revenue in 1931-1932 was 2,43,55,575 and the expenditure in the same year ran up to 2,46,07,153.

The latest figure for the number of premises within the city is about 70,963 and the Corporation has to maintain within its jurisdiction 373.27 miles of Road of which about 121.30 miles are covered with asphaltum. Though on account of the rapid growth of the City in certain directions the Corporation has not yet been able to cope successfully with the problem of drainage it has got to maintain at present about 74.77 miles of *brick sewer*, 262.87 miles of *pipe sewer* and about 183.83 miles of *surface drains*. The most urgent problem which is at present before the Corporation is the question of the outfall of the City's rain and refuse water which fall into a river called Vidyadhari a few miles to the east of the City through a system of canals. As the river is gradually silting up the Corporation has got to arrange for the outfall either by dredging the river or otherwise.

For the conservancy and other purposes' the Corporation has to run a very well-equipped department. This department has to maintain about 136 motor vehicles, 432 carts and 18.65 miles of railway.

(1) Street watering and filtered water supply in some quarters, stores, repair, etc.

The Lighting Department is under the control of a Superintendent of Lighting appointed by the Corporation. The street lighting of Calcutta is under the direct supervision of this department and for this there is arrangement both for

Lighting. gas and oil lamps as well as electric lamps. The number of gas and oil lamps used for the street lighting is about 20,000 and that of the electric lamps is about 3,355. The gas is supplied by the Oriental Gas Company Ltd. and electricity by the Calcutta Electric Supply Corporation Ltd.

The water supply is under the supervision of the Executive Engineer, Water Works. The filtered water is supplied from two stations one at Pulta and the other at Tallah. The

Water Supply. reservoir Tank at Tallah is the second largest of its kind in the world. It is a steel Tank 16 ft. deep, and has an area of 321 feet square supported on steel columns, the height from the top of the Tank to the ground level being 110 feet. It has a capacity of 9 million gallons. The unfiltered water is supplied from two pumping stations on the Hooghly, at Mullick Ghat and Watgunge. For the supply of filtered water high pressure is maintained in the morning from 5 A.M. to 10 A.M. and 3-30 P.M. to 6-30 P.M. in the evening. For the supply of unfiltered water high pressure is maintained throughout except on Tuesdays when high pressure is maintained only from 3 P.M. to 10 A.M.

Under the Act of 1923 the Corporation established a large number of Free Primary Schools within its municipal areas. The department is placed under the control of an Education Officer. In

Free Primary Education. 1923 there were only 19 schools but this number has gradually and systematically grown to 228. Besides these there are some Night Schools which have been started for the Carters and Sweepers. On the 31st March 1933, the total number of children in the Corporation Free Primary Schools was 31,008 as compared to 30,064 in the previous year. Of these 17,803 were boys, and 13,205 girls. Again out of 17,803 boys, 12,675 were Hindus, 93 Christians and 5,035 Muhammadans. Out of the total number of girls 11,189 were Hindus, 34 Christians and

1,982 Muhammadans. The total number of teachers were 1,038 (666 men and 362 women).

The Corporation has also established several Free Primary Model Schools of which the number in 1933 was 7. There is also a training School for teachers started by the Corporation. The college is situated at 33, Wellington Street and 1, Wellington Square and is under the control of a Principal. The School provides for the training of the teachers appointed in the Free Primary Schools.

The total expenditure for the Free Primary Schools and grants-in-aid to Primary and Technical Institutions and Free Libraries during the year 1932-33 was Rs. 13,94,914 as compared to 11,68,753 in the previous year. In regard to the Free Primary Education within the city the next step which the Corporation may possibly take is to find out the ways and means for making it compulsory.

For the purpose of educating the public the Corporation has established a *Commercial Museum* and a *Publicity Department* both of which are situated in the College Street Market premises. The Museum has been started with the object of collecting various samples and specimens of Industrial and Agricultural Products of India including the Native States, Burma and Ceylon. These objects are placed in show-rooms for affording facilities for making them better known to the consumers. The function of the *Publicity Department* is to awaken a "sanitary conscience" among the citizens of Calcutta and to carry out systematic preventive propaganda by means of illustrated leaflets, booklets, posters etc. It further organises peripatetic Health Exhibitions and co-operate with the Ward Health Association.

There are about 28 Health Associations in different parts of Calcutta. These Associations receive a grant-in-aid from the Corporation and collect money locally from membership fees. Their main object is to work amongst the poorer classes, and bring them medical relief. They besides organise Health Exhibitions and illustrated lectures for educating the people in matters of sanitation.

The Corporation has also a Publication department and has an official organ viz., *the Calcutta Municipal Gazette* which was founded

Publication. in 1924 by late Mr. C. R. Das, the first Mayor of Calcutta, with the object of promoting a better understanding of the work of the Corporation and moulding public opinion for a neater, cleaner, healthier and more beautiful City. The Gazette is a weekly history of the City and is both a news-paper and magazine, a newspaper to record all important municipal happenings and a magazine to publish interesting reading matter on civic and municipal problems. All Corporation notices and Tenders are published in the Gazette.

The Corporation maintains a Workshop at 3 Convent Road, Entally, which has different departments like Foundry, Machinshop, Boilermaking and Blacksmithshop, Loco and **The Corporation Workshop.** Wagon Repairshop etc. This Workshop not only does all the repair works necessary for the Corporation but also manufactures water pipes, hydrants, lamp posts, conservancy carts, fans and various other things for the use of the Corporation.

There is besides a Health Department of the Corporation under the general supervision of an Health Officer with District Health **The Health Department of the Corporation.** Officers and Inspectors to assist him in the execution of his duties. His main function is to look after the sanitation of the city and make such recommendations as may help the improvement of the sanitary conditions of different parts of the municipal area.

It is very difficult to judge the health of Calcutta merely from vital statistics because a large part of its population is semi-floating.

The Health of Calcutta. According to the Census of 1931 the number of female deaths in Calcutta between 1921 and 1931 is 792 for every 1,000 male deaths. When the discrepancy in the sexes is taken into account the figures indicate a relatively very high incidence of mortality amongst females in Calcutta. The recorded male death rate on the average was 23.5 per mille which is comparable with 24.9 per mille which is the rate for all Bengal. The recorded female death rate was on the average 38.6 compared with

24.3 per mille in the whole of Bengal. This shows that the female death rate is more than 64 per cent higher than the male death rate and lately this discrepancy has increased even up to 77 per cent.

The largest number of cases of deaths in Calcutta are due to Tuberculosis, Malaria and Digestive diseases. The digestive diseases and Tuberculosis prove most fatal. "On the average nearly six thousand males and over 4 thousand females annually die from respiratory diseases. Fevers are recorded as the cause of death annually of nearly 2,500 males and over 2,000 females. Dysentery and diarrhoea are the next most fertile sources of mortality. The deaths from respiratory diseases in Calcutta account for almost thirteen times the proportion of deaths due to these causes in all Bengal, but the proportion of deaths from fevers which is higher than from any other cause in the whole of Bengal is only one-fifth or one-sixth as large in Calcutta".

Therefore considering the fact that Calcutta is in the heart of malaria-stricken Bengal the rate of deaths in Calcutta from fever speaks very much in favour of the healthiness of the City. This is largely due to the fact that Calcutta's Water Supply and Conservancy are fairly good. The city also being the home of a large educated community, the average standard of living is better than what it is elsewhere. Moreover in density of population, Calcutta is somewhat better off than many other cities.

In order to check the progress of the malarial fever in different wards of the city the Corporation has recently opened a *Mosquito Control Department*. Its officers regularly visit the localities affected by malaria and use disinfectants for destroying the mosquitoes and their larvae particularly in tanks, open drains, and marshy lands and other places where the mosquitoes generally breed.

It has been on the programme of work before the Improvement Trust to open out Squares and Parks as well as spacious Roads particularly in congested areas of the City and it is hoped that these measures will greatly reduce the number of annual deaths from respiratory diseases.

It cannot be, however, denied that there is plenty to do in Calcutta regarding the supply of pure food, good dwellings, conservancy etc. But neither the local Government nor the present Corporation is wholly indifferent to these matters of health.

This is but a short sketch of the manifold activities of the present Corporation. Calcutta in the time of Job Charnock had only a population of 12,000 souls but during the last two centuries and a quarter it has grown into an extensive City and necessarily the administrative machinery of the Corporation has become a vast and complicated one. There is no doubt that civic sense in the rate-payers has considerably developed and the Corporation which is mainly constituted of their representatives is now a Corporation which is largely conscious of its responsibilities towards its electors. Thus Local Self-government in this particular case has proved a complete success.

APPENDIXES

I

POPULATION OF CALCUTTA.

1710	...	...	...	12,000
1752 Holwell's Estimate	...	...	...	409,000
1782 Mackintosh's „	...	...	...	500,000
1789 Grand Pre's „	...	...	...	600,000
1800 Police Comsr's „	...	...	...	500,000
1802 Chief Mgte's „	...	...	...	600,000
1814 Sir E. Hyde's „	...	...	...	700,000
1815 East India Gazetteer	...	...	...	500,000
1821 Assessor's estimate	...	...	...	230,502
1831 Captain Steel's „	...	...	...	411,000
1837 Captain Birch's „	...	...	...	230,000
1840 Simm's „	...	...	...	361,000
1850 Chief Mgte's „	...	...	...	413,000
1872 Census	...	...	...	633,009
1881 Census	...	...	...	612,307
1891 Census	...	...	...	682,303
1901 Census	...	...	...	847,796
1911 Census	...	...	...	896,067
1921 Census	...	...	...	907,851
1931 Census	...	...	...	1,196,734

II

BIRTHS AND DEATHS OF CALCUTTA SINCE 1901.

Year	Total birth	Ratio per mille per year.	Total death	Ratio per mille per year.
1900 —	10,773 ...	12.7 ...	36,709 ...	43.2
1901 —	9,129 ...	10.7 ...	32,456 ...	38.2
1902 —	12,122 ...	14.2 ...	31,410 ...	37.0
1903 —	13,182 ...	15.5 ...	29,765 ...	35.1
1904 —	15,250 ...	17.9 ...	32,181 ...	32.2
1905 —	15,637 ...	18.4 ...	32,181 ...	37.9
1906 —	15,083 ...	17.7 ...	30,293 ...	35.7
1907 —	16,224 ...	19.1 ...	81,942 ...	37.6
1908 —	17,043 ...	20.1 ...	27,639 ...	32.6
1909 —	19,423 ...	22.9 ...	28,946 ...	34.1
1910 —	17,106 ...	20.1 ...	23,728 ...	27.9
1911 —	19,515 ...	21.7 ...	24,396 ...	27.2
1912 —	19,426 ...	21.6 ...	25,209 ...	23.1
1913 —	18,386 ...	20.5 ...	26,188 ...	29.2
1914 —	17,386 ...	19.4 ...	25,431 ...	28.3
1915 —	16,578 ...	18.5 ...	25,890 ...	28.5
1916 —	18,737 ...	20.9 ...	22,098 ...	24.7
1917 —	18,807 ...	20.9 ...	21,360 ...	23.8
1918 —	18,166 ...	20.3 ...	31,371 ...	35.0
1919 —	16,565 ...	18.5 ...	37,839 ...	42.2
1920 —	15,375 ...	17.1 ...	35,276 ...	39.3
1921 —	17,308 ...	19.0 ...	30,395 ...	33.4
1922 —	17,349 ...	19.1 ...	26,381 ...	29.1
1923 —	18,212 ...	20.1 ...	25,834 ...	28.5
1924 —	19,666 ...	18.3 ...	31,881 ...	29.6
1925 —	20,346 ...	18.9 ...	35,195 ...	32.7
1926 —	18,199 ...	16.9 ...	37,376 ...	34.7
1927 —	16,740 ...	15.5 ...	36,820 ...	34.1
1928 —	22,001 ...	20.4 ...	34,119 ...	31.6
1929 —	22,789 ...	21.1 ...	32,981 ...	30.6
1930 —	23,614 ...	22.9 ...	31,135 ...	28.9
1931 —	26,477 ...	22.1 ...	30,562 ...	25.4
1932 —	24,925 ...	20.7 ...	30,011 ...	25.0

III

**POPULATION OF THE PRINCIPAL CITIES OF INDIA AND
BIRTHS AND DEATHS PER MILE.**

Name of the city	Population in 1931	1932	
		Birth	Death
Calcutta	11,96,734	20·7	25·0
Bombay	11,61,383	24·8	19·7
Madras	6,47,230	43·3	34·4
Lucknow	2,51,097	46·26	37·72
Delhi	3,47,539	45·40	27·59
Lahore	4,00,075	30·07	24·89
Agra	2,05,487	60·32	36·89
Karachi	2,47,791	47·92	26·20

CHAPTER IV

THE SOCIAL LIFE IN CALCUTTA

THE RELIGION, CASTE LITERACY AND OCCUPATION.

Calcutta is the meeting place of many nations and many religions. Its social life therefore is bound to be varied and if we are to describe the various aspects of this social life we have to take into account the various races living in this city, their religions, the customs peculiar to each of them and their traditional institutions which they have tried to maintain and develop since the beginning of their settlement in Calcutta.

Amongst the religions professed in the city Hinduism and Mahomedanism claim the largest numbers of the entire population.

Religion. Hinduism is represented by different shades of religious faiths like Śākta, Vaiṣṇava, Brāhma and Ārya-samajist. Amongst the followers of Islam the number of the Sunnis is the largest and the Shiah count only about 300 in number. Christianity comes third as far as the numerical strength of its followers in the City, its suburbs and Howrah is concerned. There are besides the followers of Zoroastrianism, Jainism, Buddhism Sikhism, Confucianism and Tribal beliefs. Of the Jains there are various sects in Calcutta. The followers of Zoroastrianism are the Parsees and those of Confucianism are the Chinese. Amongst the Christians the native Christians are more numerous than others.

In the City itself the most numerous social groups are represented by the Brahmins, the Kayasthas and the Mahishyas. There are larger numbers of Brahmins living in the suburbs in

Social groups. 24-Parganas than Kayasthas with the result that although the Brahmins are more numerous than any other caste people in Calcutta with its suburbs the Kayasthas take their place in Calcutta proper. After the Mahishyas the Subarnabaniks now command the largest number in Calcutta proper as well as in

the City with its suburbs. The Brahmins, the Kayasthas and the Baidyas together form about 40 per cent. of the total number of Hindus in the City. The Subarnabaniks, Shahas and Gandhabaniks who represent the indogenous trading classes contribute more than 10,000 each to the population of Calcutta proper. Besides these the functional classes like Goalas, Chamars, Doms, Kalus, Muchis, Napits and Dhobis all contribute as many as 10,000 to the total population in the city proper. Amongst the cultivating classes the Mahishyas are the most numerous and the number of the Namasudras and Pods, though, small is not insignificant. The primitive peoples from Bihar and Orissa are very few in numbers. They are less than 4,000 including all their sections namely Agarias, Bahelias, Bhuiyas, Bhumij, Ghatwals, Kewats, Kharias, Mundas, Oraons and Santals.

In the population of Calcutta proper the total number of literate persons recorded by the Census of 1931 is 743,589 of which 111,031 are females. The corresponding numbers in the suburbs of Calcutta are 14,062 of which 11,294 are females, and in the Howrah city 72,569 of which 17,556 are females. Judging by religions and taking both sexes together the order of literacy in Calcutta with its suburbs in the 24-Perganas is as follows: Christians—77.7 per cent., Zoroastrians—71.3 per cent., Jews—69.3 per cent., Jains—58.2 per cent., Buddhists—57.4 per cent., Sikhs—48.4 per cent., Hindus—44.5 per cent., Confucians—36.8 per cent., Muslims—31.0 per cent. and those professing tribal religions—8.5 per cent.

The following figures fairly represent the distribution of literate persons per 10,000 :

Calcutta with Suburbs—

Males : literate—4,302.

literate in English—2,191.

Females : literate—1,213.

literate in English—832.

Calcutta—

Males : literate—4,388.

literate in English—2,295,

Females : literate—2,786.
 literate in English—925.

Calcutta is primarily an industrial and commercial city and therefore the greater portion of its population lives on industry, trade and commerce. Of the entire population of Calcutta

Occupation. with suburbs about 272,024 live on industry, transport and trade. As the Census reports of 1921 show this number was even greater then and of the entire population which was less in that period about 335,444 had these callings. The remarkable decrease in this number is apparently due to the universal depression in trade and commerce. The number of people who live on religion, law, medicine, instruction, letters, arts etc. and on service particularly in the State has increased by several thousands since 1921 but still it is not altogether more than 51,411 as the Census reports show.

THE HINDU SOCIETY IN OLD CALCUTTA.

The early Hindu settlers of Calcutta were the Seths and the Basaks who were the native traders. Documents are wanting to give a picture of their Society. The first Calcutta Journals the *Bengal Gazette*, *Samāchār-darpan*, *Sangbād-darpan* and *Samāchār-chandrika* were published between 1816 and 1822 and it is in these Journals that we get for the first time pictures of the contemporary Hindu society.

The *Suttee* represents the darkest feature of this Society. Though the practice of the immolation of widows was nothing special to India in early days the fact remains that no attempt was

The Suttee. made by the Hindu intelligentsia to put a stop to it before the end of the first quarter of the 19th century. It should however be noted that the Pandits of Benares tried to check it to some extent by issuing the religious injunction that no widows below the age of 16, the widows who are pregnant and those who have little children to nourish should not be permitted to perform the *Suttee*. It seems curious that the largest number of *Suttee* used to take place in Calcutta and other places in its vicinity whereas the number of *Suttees* in other parts of Bengal was much less.

The following figures appearing in the contemporary local Newspapers give a picture of it for three years :

		1815	1816	1817
Calcutta and Suburbs	...	253	289	441
Dacca	... ..	31	24	52
Murshidabad	... ..	11	22	42
Patna	... ..	20	29	39
Benares	... ..	48	65	109
Bareilly	... ..	17	13	19

Amongst the European visitors Valentjn in 1677 and Hamilton in 1727 wrote about the practice of Suttée from personal observation. It was in 1829 that Raja Rammohan Ray in face of some opposition from the orthodox Hindu society moved the Government of Lord William Bentinck to stop this practice by legislation.

The places of greatest attraction in the Hindu Society of Calcutta in those days were the private residences of some of the Zemindars who were patrons of art and literature. The most illustrious amongst these people was no doubt Raja Nabokissen of Shovabazar who had played some important part in the history of the first British settlement in Calcutta by helping the English considerably during their troubles with the Nawab. Not only the Raja was immensely rich but he was without doubt an enlightened man in his days and was a great patron of art and literature and the members of his family followed this tradition for a long time. The following account from his *Memoirs* will speak not only about his own tastes but also about those of the aristocratic Hindu society in his days :

“His appreciation of fine arts, of music in particular, was in every way worthy of himself. Haru Thakur and Nitai Das, well-known as composers of songs, were his *proteges* and he introduced in Calcutta Society and popularised the *nautch*.....It is *Bai-nautch*. The songs of Kabis were a favourite entertainment of Hindu society. They were a curious illustration of the blended powers of metrical composition and of controversy; songs composed by one person or party and sung before an assembly were then and there answered by another. The answer brought a reply and so the song duel went on till one side was

fairly exhausted.....Of another kind of musical entertainment known as *Akhras*, the Maharaja was a distinguished and probably the first patron. Kului Chandra Sen who was not only competent in *Akhras* but probably its founder, received great encouragement. A cousin of Kului—Ram Nidhi Gupta—popularly known as Nidhoo Babu, made great improvement in the art. Distinguished musicians, singers and players on instruments came to him, attracted by his fame as a votary of Muses and none went disappointed." Such were the ways of the aristocratic Hindu society in Calcutta and those who were equally enlightened followed the same customs. The patronage of the Zemindars, in fact, kept the art and literature of the country living. When these functions used to take place in the houses of the rich people the public were not excluded from attending them and had a considerable share in the enjoyment.

Amongst the religious ceremonies the Durga Puja used to be performed in the houses of these rich people with singular pomp and
The Durga Puja. the whole Hindu Society of Calcutta was astir to attend it. A contemporary journalist gives an account which is worth quoting (*Asiatic Journal* 1816):

"The festival of Doorga Pooja is now celebrating in with all the usual concomitants of clamour, tinsel and glare. The houses of wealthier Bengalees are thrown open for the reception of every class of the inhabitants of this great city, the hospitality so generally displayed, is worthy of every praise which it is in our power to bestow. We had no opportunity on Monday evening of discovering in what particular house the attraction of any novelty may be found, but from a cursory view we fear that the chief singers Nik-hee and Ashroon, who are engaged by Neel Mune Mullik and Raja Ram Chunder, are still without rivals in melody and grace. A woman, named Zeenut, who belongs to Benares, performs at the house of Budr Nath Baboo, in Joro Sanko. Report speaks highly of a young damsel, named Fyz Boksh who performs at the house of Goroo Persad Bhos."

Besides these kinds of amusements the indigenous dramatic performances called *Yatra* were very popular. These
Theatre. *Yatras* which still survive have more or less a religious character and deal with classical topics. They

are less dramatic in character. The Bengali drama came into being under western influence between 1852 and 1872. In the first stage remarkable attempts were made by some Bengali gentlemen of social standing to have their own theatres for the amusement of their friends. On December 28, 1831 the Hindu Theatre was started by Prasanna Kumar Tagore. A Theatre belonging to Nabin Chandra Basu, a wealthy resident of Shyambazar was started as early as 1833 and in 1835 it staged a dramatic version of *Vidyasundar*. From 1852 more systematic attempts were made in this direction and the Bengali stage and modern Bengali drama came into being. But in the early days of Calcutta the Hindu society had to remain contended with the old *Yatra* which was largely appreciated.

The temple of Kalighat was the place of pilgrimage for orthodox people in those days as it is even now. Evidences are wanting to determine the date of the foundation of the Kali

The Temple of Kalighat.

temple at Kalighat. But we have seen that the place is mentioned as early as 1495 by Vipradasa in *Manasa-mangal*. The mythology would tell us that when Siva was roaming all over the world with body of the dead Sati unmindful of everything else Vishnu with his discus cut the body of the Sati into 51 pieces each of which fell in a particular place. All these places came to be held sacred to the Hindus (*pitha-sthana*). Kalighat commemorates the place where the toe of the right foot of Sati fell. Whatever the significance of the myth may be Kalighat is still sacred to the Hindus all over India and the Hindi invocation *Bam Kālī Kalkattāwālī* points out how widely the Goddess of Kalighat is esteemed.

On account of the importance of the place in the eye of the public even the East India Company used to pay respects to the shrine.

The worship of the Goddess.

It is said that in their earlier days the Company used to offer Puja to the deity. In the *Life and Times of Carey, Marshman and Ward* it is said :
 “ Last week a deputation from the Government went in procession to Kalighat and made a thank-offering to this Goddess of the Hindus, in the name of the Company, for the success which the English have lately obtained in this country. Five thousand

Rupees were offered. Several thousand natives witnessed the English presenting their offerings to this idol."

A contemporary account says: "The daily offerings to this Goddess are astonishingly numerous, on days when the weather is very unfavourable not less than 320 pounds of rice, twenty-four of sugar, forty of sweet-meats, forty of clarified butter, ten of flour, ten quarts of milk, a peck of peas, eight hundred plantains and other things are offered, and eight or ten goats sacrificed. On common days of all these things three times the quantity, and at great festivals or when a rich man comes to worship, ten, twenty or forty times this quantity and as many as forty or fifty buffaloes and a thousand goats are slain."

The same account gives us an idea of what the rich people used to spend for worshipping the goddess. When Raja Nabakissen paid a visit to the temple at Kalighat he spent not less than 100,000 Rupees on the worship of this goddess. Amongst the offerings was a gold necklace valued at 10,000 Rupees, a rich bed, silver plates, dishes and basins, sweetmeat and other food sufficient for the entertainment of a thousand persons and trifling presents of money to nearly two thousand of the poor.

THE EARLY EUROPEAN SOCIETY.

The European society in Calcutta in earlier days of the English settlement was not quite a normal one. It was an age when communication with their motherland was not so brisk and the Europeans were placed in a country where they were practically isolated from the people and had to communicate with them only in matters of business. Besides in order to be acclimatised in the tropical climate of the country they had to change some of their habits.

The first English settlement in Calcutta is accompanied with a romance. Sometime in the year 1678 Charnock who was walking about the banks of the river at Hooghly observed a young Hindu widow of beautiful aspect, gorgeously arrayed, proceeding towards the funeral pyre of her aged husband. The too susceptible Charnock became smitten with her

**The romance
of the first
Settler.**

charms and as she appeared to be reluctant to sacrifice herself, he with some assistance rescued her, took her to his home and she became his wife and bore to him several children. She died and her remains were interred in the family vault in St. John's Churchyard where her husband used to sacrifice a fowl on the anniversary of her death.

Among the early English settlers in Calcutta early rising was a rule and a morning ride was frequently indulged in. According to a contemporary writer, "at four o'clock in the

The daily habit. morning while it is yet utterly dark, there is an universal stir throughout the house, much talk of horses, hats whips, and coffee, and a voice at the door enquiring whether a ride or a drive would be preferable. Work also began early, the hours at Public offices being from 9 o'clock to 1 in the morning and 7 o'clock till 9 o'clock in the the evening. Dinner was served at 2 and was a huge affair. Much wine was drunk. A wag in the *Calcutta Gazette* of October 9, 1788 suggests the following "Guides to health"—the gentlemen are particularly entreated not to eat above four pounds of solids at a meal, or drink above six bottles of claret. Dancing will be extremely fatal to the ladies, if taken more than three times a week, and they are positively forbid to wear full dresses of either sat'n or velvet, until the 1st November.

"The rage for smoking," wrote a contemporary chronicler in 1789 "extends even to ladies, and the highest compliment they can

**The rage for
smoking
hookkah.**

pay a man is to give him preference by smoking his *hookkah*." To continue in the words of another contemporary chronicler "the custom of reposing if not sleeping after dinner is so general that the streets of Calcutta are, from four to five in the afternoon, as empty of Europeans as if it were midnight. Next come the evening airings on the course, where everyone goes, though sure of being half suffocated with dust. On returning thence, tea is served and universally drunk here even during the extreme heats. After tea, either cards or loo fill up the space till ten when supper is usually announced. Formal visits are paid in the evening, they are generally very short as perhaps each lady has a dozen calls to make and a party waiting for her at home besides.

Gentlemen also call to offer their respects and if asked to put down their hats, it is considered as an invitation to supper."

From a letter written by Cornwallis to his son at Eton we get a glimpse of the daily habits of an Englishman in Calcutta in his days : " I get on horseback just as the dawn of day begins to appear, ride on the same road and the same distance, pass the whole forenoon after my return from riding in doing business.....drive out in a phaeton a little before sunset, then write or read over letters or papers on business for two hours, sit down at nine...to some fruit or biscuit and go to bed after the clock strikes ten." Public ceremonies were held in the mornings. It was the custom of Cornwallis who did not set much store by formalities, to give the word of command, " off coats" as soon as he sat down to table, in order to make his guests more comfortable.

Calcutta society in those days was full of gaiety and there was no dearth of amusements. Billiards were then as now a favourite game. " The sums won and lost must keep

Amusement. the blood in perpetual fever. In private families, the billiard is a kind of state-room. At the coffee houses you are accommodated with tables and attendants for eight annas or half a rupee, by candle-light, a certain number of hours—every coffee house having at least two tables : so that men of spirit have as many fashionable opportunities of themselves here as Europeans can boast. Selby's Club was a famous gambling one but Lord Cornwallis put down public gambling with a high hand."

Boating in long handsome boats called snake-boats was much practised, particularly in the evening, with bands of music. Gentlemen kept their pleasure yachts and went occasionally

Gay Boat-trips. in them with their friends to Chandernagore or Shuksagaur on pleasure trips. There are a number of contemporary accounts of such boat trips and of the different kinds of native boats which were used for such trips.

Stavorinus states in 1770 about such trips : "Another boat of this country, which is very curiously constructed is called a Mour-pankhy, these are very long and narrow and sometimes extending to upward of an hundred feet in length and not more than eight feet in

breadth, they are always paddled, sometimes by forty men and are steered by a large paddle from the stern, which is either in the shape of a peacock, a snake or sometimes other animals, the paddles are directed by a man who stands up and sometimes makes use of a branch of a plant to regulate their motion, using much gesticulation and telling stories to excite either laughter or exertion. In one part of the stern there is a canopy supported by pillars on which are seated the owner and his friends, who partake of the refreshing breeze of the evening. These boats are very expensive, owing to the beautiful decorations of painted and gilt ornaments, which are highly varnished and exhibit a considerable degree of taste." An account of Warren Hastings' trip to the *sagaur* says "their budgerows were well stored with provisions, and every requisite etc. so with pendants flying, and bands of music to the last man and instrument to be found in Calcutta, they attended him to Sagaur, the extremity of the river." Lord Wellesley's state barge is described in 1803 as "richly ornamented with green and gold, its head had a spread eagle gilt, its stern a tiger's head and body, the centre would convey twenty people with ease".

The high officials in those days used to live in greater luxury than was possible later. An immense number of servants was kept, in addition to slaves. "One hundred and ten
Luxury. servants to wait upon a family of four people," writes Macrabie, Secretary and brother-in-law of Francis, "and yet we are economists."

Previous to the Battle of Plassey (1757) there was hardly any metalled road in Calcutta. This is why carriages were not much used. Palanquin was greatly in vogue as it was the most convenient conveyance. The Governor and the senior member of the Council only used carriages.

Racing was then popular in Calcutta as now. There were two race courses one near Garden Reach and the other on the maidan.
Racing. There was so much of enthusiasm about it that in 1780 a subscription plate of Rs. 2,000 was advertised and it was stated that at the close of the race the stewards would give a ball to the gentlemen and ladies of the settlement. Lotteries were then the order of the day.

It has been stated by more than one traveller that English settlers of those days were hospitable. In an account of travels (1760—1768) it is observed: "There is no part of the world

Hospitality. where people part with their money to assist each other so freely as the English in India." The guests used to be treated sumptuously as is proved by the following account: Breakfast is described as the only *degagé* meal every one ordering what is most agreeable to their choice and in elegant undress chatting *à la volonté*, whilst on the contrary, dinner tea and supper are kinds of State levees. At twelve a repast is introduced, consisting of cold ham, chicken and cold shrub. Supper was light at 10 o'clock, a glass or two of light wine with crust, cheese, then the hookkah and bed by 11. Lord Cornwallis on the New Year's Day 1789 invited a party to dinner at 3½ at the Old Court House. Turtle and turkey courted the acceptance of the guest, a ball opened 9½ in the evening, supper at 12, they broke up at 4 in the morning.

About drinks it is said: Wine is the heaviest family article, for whether it is taken fashionably or medicinally, everybody drinks at least a bottle per day and gentlemen four times that quantity. Beer and porter were little used, the favourite drinks were madeira and claret, cider and perry also formed part of the beverages...ladies drink their bottle of claret daily while gentlemen indulged in their three or four and that at five rupees a bottle.

There were eight hotels in Calcutta in the eighteenth century: the London, the Harmonic which occupied the present Police Court building, the Union, Wright's new Tavern near St. John's Church, the Calcutta Exchange, the Crown and Anchor, Beard's Hotel and Moor's Tavern. Monsieur de la Gallais Tavern was famous for public breakfast and masonic banquets. Besides these there were in 1800 eleven punch houses and several eating houses and lodging houses in different parts of the town. There was a theatre in Calcutta before the sack of Calcutta by Siraj-ud-dowla. It was rebuilt in 1775-76 by public subscription. The theatre was performed by amateur actors. A ball room was attached to the theatre.

Hotels and Theatres.

THE PORTUGUESE IN CALCUTTA.

Some of the Portuguese of Hooghly followed Job Charnock to Calcutta. They were given a plot of land at the site of the Old Fort for the purpose of erecting a chapel. The **Portuguese Churches.** Augustinians immediately built a wooden chapel on the spot but it was pulled down in 1693 by the order of Sir John Goldsborough the Chief Governor of the East India Company. The chapel was rebuilt in brick in 1700 further away from the old chapel in Murghihatta where the Cathedral now stands. In 1720 the Chapel was enlarged under the direction of the Vicar. It was ransacked in 1756 by the Nawab but the Chapel was saved. Towards the end of the 18th century the Catholic community in Calcutta was growing and the need for a bigger Church was felt. The new Church which still stands was therefore constructed in 1797.

The Portuguese, their descendants and converts who were first settled in Murghihatta subsequently dispersed to other parts of Calcutta. A number of them lived in the locality between Dharamtolah and Bowbazar Streets which was a fashionable quarter of Calcutta in those days and was known as the European quarter. The Catholics who settled in Baitakhkhana obtained permission from Lord Wellesley in 1803 to build a new Church. This Church, the Church of our Lady of Dolours was constructed 1809-10.

Another Church, the Church of the Sacred Heart of Jesus was built on the Dharamtolah Street by the grandmother of Sir Walter de Souza.

Of the descendants of the Portuguese in Calcutta the name of Henry Louis Vivian Derozio is still dear to the Indians. He was born in 1809 in a house on the Lower Circular **Derozio.** Road which is still in existence. At the age of eighteen he published his first book of poems which were well spoken of in the London Press and won for him the post of sub-editor of the *India Gazette* in 1826, and soon after that he was appointed professor in the Hindu College, now the Presidency College. He was a remarkably successful teacher and

taught literature, history and philosophy. He "possessed the rare power of weaving interest around any subject he taught". He was loved by his Indian students many of whom became very distinguished men of Bengal. "He worked for the emancipation of Hindu society and instilled into his pupils the ideals of liberalism and taught them to think for themselves." This brought in difficulties and Derozio was compelled to resign. But his pupils still loved to receive instructions from him as they did before. It has been justly said about him "the gifted Eurasian teacher philosopher and poet, during the short period of his connection with the Hindu College did more to arouse quicken and impel the thought of Young India than any man then living or since dead". He was an eloquent orator and had a remarkable journalistic career. He died in 1831 at the early age of 23 deeply mourned by his friends and admirers.

THE CONTACT BETWEEN THE EAST AND THE WEST.

No healthy contact between the European and Hindu Society seems to have taken place before the end of the eighteenth century. The necessity of a better understanding between the two communities was first felt for the improvement of the administrative machinery. It was at the instance of Warren Hastings that serious attempts were made to acquire a knowledge of the Hindu Law and Custom.

Real contact between the two communities was started through the efforts of sympathetic scholars. The first amongst these was probably Sir William Jones—the famous Orientalist. Jones who was already versed in Arabic and Persian came to Bengal as a Judge of the Supreme Court. As a man of scholarly temperament he soon discovered that the field of research was very large in India. He founded the Asiatic Society of Bengal in 1784 and devoted himself to the study of Sanskrit with the help of Pandits. In 1788 he pointed out to the Governor-General, Lord Cornwallis, the crying need of a digest of Hindu and Mahomedan Laws, and offered to undertake such a compilation himself. As soon as the necessary sanction was given by the Government Jones entered upon this

**Sympathetic
Scholars.**

colossal task, and carefully selected a number of Hindu and Mahomedan scholars to assist him in his work. The work was not finished during his lifetime. They were completed through the cares of Colebrook. *The Mahomedan Law of Inheritance* was published in 1792 and the *Ordinances of Manu* in 1794.

The tradition of Sir William Jones was followed for some time by Orientalists like Colebrook, Wilson and others who tried to come into closer touch with the native scholars to be able to understand better their culture. A real necessity was felt by the authorities to train the English civilians in the language and the literature of the country and for that purpose the College of Fort William was started in 1800.

The people of the country on the other hand began to appreciate better the value of the European civilization through the efforts of people like Rev. Alexander Duff, David Hare, Derozio and Captain D. L. Richardson. These

Rev. Alexander Duff. people as teachers not only aroused a genuine interest for the English literature in the Bengali students but won them over to their side by establishing bonds of real love and affection. Alexander Duff reached Calcutta in 1830 and opened an Institution in the same year for the propagation of the Gospel through education on western lines through the medium of English. This was the General Assembly's Institution. On account of unavoidable circumstances he left this Institution in 1843 and founded another College called the College of the Church of Scotland. The two colleges were however amalgamated in 1908 as the "Scottish Church College." He started the first Institution with 7 students but the number soon swelled to 1,200. He also opened

David Hare and Captain Richardson. a girls' school in 1857. David Hare was practically the father of native education, was one of the founders of Hindu College and a loving teacher. Captain Richardson came to India in 1819 as a military officer but gave up his office as an invalid. He was appointed the Principal of the Hindu College and served as the Principal of various colleges till 1861. "He was a sympathetic tutor, absolutely devoid of any race prejudice and was on terms of intimacy with many

leading Indians of Calcutta. It was he who created a genuine taste in Bengali students for the literary treasures of the West."

At about the same time various missionary Societies were making a tremendous effort in giving the people education on western lines. Towards the close of the last century they were teaching about 120,000 pupils in the country and it was nearly five times the number of students in the Government institutions.

Social intercourse between the European and Indian Society was not wholly lacking. When the first Bengali plays were being staged through the efforts of wealthy Indian gentlemen the audience was a mixed one. Many European gentlemen were invited to witness the performances and the band from the Fort William often played the Orchestra. When a play was staged in the house of the Paikpara Raj in 1858 Sir Frederick Halliday, the Lieut.-Governor of Bengal attended with his family and there were besides many English ladies amongst the guests invited. One of the actors was warmly congratulated by Sir Frederick.

Englishmen also sometimes used to fight for the just grievances of the Indians. When the Indigo planters in Bengal chose to oppose English officials and Indian public men, a fierce agitation was started in Calcutta. Rev. James Long, a missionary imbued with the true spirit of Christianity, translated into English *Nil Darpan*—"Mirror of Indigo", a Bengali drama which dealt with the cruelty with which the Indigo planters used to treat the helpless *ryots*. In the introduction to the English translation Rev. Long commented on the propaganda done by some of the English News-papers in favour of the planters. Long was brought to trial on July 19, 1861 and sentenced to a month's imprisonment and a fine of Rs. 1,000 which was immediately paid by an Indian citizen of Calcutta, for the sentence was regarded as a grave miscarriage of justice by all impartial observers including the then Bishop of Calcutta, Dr. Cotton.

Through the activities of the missionaries a number of young men with brilliant prospects became converted to Christianity. But there was no further progress in this direction after sometime on

account of the reactionary movements in the Hindu society itself and a closer contact between the East and the West gave rise to other movements.

THE NEW RELIGIOUS MOVEMENTS.

The western influence on the Hindu society manifested itself in various ways. It indirectly contributed to the rise of the Brahmo Samaj Movement which was started by Raja

The Brahmo Samaj Movement. Rammohan Ray. Rammohan was in Calcutta from 1814 to 1830. He was not only an advocate of English education but also at the root of several reform movements, both social and political. In

respect of religion he was anxious to introduce a new mode of worship in the Hindu religion. "He was opposed to the conventional Hindu worship of gods and goddesses, opposed to the caste system, opposed to Suttee which he helped to abolish. He was a Vedantist and his years of stay at Calcutta were occupied with preaching the monotheistic doctrines of Vedanta." In 1828, he started the Upasana-sabha in which a congregational mode of worship was introduced. Rammohan left for Europe in 1830 where he died in 1833. His religious movement in Calcutta which had not died away in the meanwhile was taken up again in right earnest by Maharshi Debendranath Tagore in 1843. Debendranath had a number of co-workers in the task. Though they questioned the infallibility of the Vedas they made their stand on the Upanishads. There was therefore no sharp difference with the orthodox section of the Hindus. But Keshab Chandra Sen soon tried to give a distinct shape to this movement, and that led to a great schism amongst the followers of the new movement. The faith of Keshab Chandra was more eclectic in nature than that of Debendranath. Keshab

Keshab Chandra Sen. Chandra was greatly influenced by the Bible and did much to propagate the new faith by organising missionaries. In 1866 he seceded from Debendranath Tagore and founded the Brahmo Samaj of India. Branches of this Samaj were founded in different parts of India. In 1878 a large

body of prominent Brahmas separated from Keshab Chandra and founded the Sadharan Brahma Samaj on more democratic lines. This Samaj now claims the largest number of followers.

The conversion of some of the best young men of the country to Christianity and the foundation of the Brahmo Samaj had their reactions in the orthodox Hindu society. The

Reaction. powerful guardians of orthodox Hinduism were men like Raja Radha Kanta Dev and Ram Kamal Sen. Thus in the informal meeting of the foundation of the Hindu College the orthodox Hindu members refused to work with Raja Ram Mohan Ray who was thus compelled to withdraw from the Committee. Opposition was also offered to the Christian Missionaries and papers were started for that purpose. Derozio was removed from the staff of the Hindu College because his teachings had begun to revolutionize the thoughts of the Hindu boys. Various religious societies were soon founded. In 1830 the *Dharma Sabha* was established under the patronage of Raja Radha Kanta Dev. Great importance began to be attached to the *Bhagavadgita* and the ideas contained in it began to be propagated. Even the great novelist, Bankim Chandra Chatterji helped this movement by publishing a Bengali commentary on the sacred text.

The appearance of a great man like Ramkrishna Paramahansa and his famous disciple Vivekananda saved the Hindu society from complete wreckage. Ramkrishna who was probably the greatest *sadhak* of his days was not so aggressive a Hindu as Svami Vivekananda was. It is said that Ramkrishna himself tried, through the medium of all religions, to attain the goal and that in a spirit of toleration he declared that all the religions are equally effective means of attaining the goal. This did not help a little in strengthening the faith in Hinduism. Svami Vivekananda who attained his first success in the cause of Hinduism at the Parliament of Religions held at Chicago was an apostle of the Neo-Vedantic movement in the country. This movement succeeded in awakening in the hearts of the Bengali youth a consciousness of their ancient religious culture and a sense of duty and responsibility to their spiritual

heritage. The Ramkrishna Mission was started by him in 1899 and there are now more than 100 branches of this Mission all over India.

The Arya Samaj has very little following either in Calcutta or in other parts of Bengal. In recent years the Hindu Sabha and the Hindu Mission have been very active particularly amongst the untouchables and the immigrant primitive population in some of the Bengal districts. **Arya Samaj and Hindu Sabha.** but it is still impossible to estimate the effect of their movements amongst the people.

NEW SOCIAL MOVEMENTS.

Of the new social movements which were started in the 19th century we have already mentioned the attempt made by Raja Ram Mohan Ray for the abolition of the Suttee. The next social movement which agitated the Hindu society to a greater extent was the widow-remarriage movement. **Widow Remarriage.** As early as 1845 Moti Lal Sil offered a gift of Rs. 10,000 to any Hindu who would volunteer to marry a widow of his own faith. His appeal to the orthodox section of the Hindu society met with a strong rebuff. But when Pandit Iswar Chandra Vidyasagar, a man who was widely respected, appeared on the scene the Hindu society could not brush aside the problem so easily. Vidyasagar came out with a book in which he cited the authority of the Hindu Law books in support of the widow-remarriage. Petitions containing the signatures of a large number of people were sent to the Government and the Widow-remarriage Act was passed in 1856. Though not on a wide scale, young widows were now married even in high class Hindu societies.

The movement has not died away since the time when it was started. In modern times the Hindu Sabha is one of greatest champions of widow-remarriage and there are several societies in Calcutta which advocate the cause of widow-remarriage. The Census report of 1931 records in this respect: An increasing prevalence of widow remarriage indicated by a decrease in the proportion of widows is

evidently shown in each of the three cities, Calcutta, Howrah and Dacca. In Calcutta there has been a decrease in actual numbers both of males to 3,760 and in the case of females to 8,439. In the case of Howrah the decrease amounts to 1203 in the case of males and to 1296 in the case of females. The following figures will clearly state the proportion of widows *per mille* in Calcutta and Howrah':

I. CALCUTTA	1921	1931
Males	35	27
Females	223	181
II. HOWRAH		
Males	42	218
Females	218	166

Vidyasagar was also instrumental in starting a campaign for the abolition of polygamy which had been the curse of Kulinism in Bengal. In this campaign he was joined by others and in 1855 some leading men of Calcutta and its Suburbs submitted a joint petition to the Legislative Council for an act against the institution of polygamy. Similar petitions were also submitted by orthodox Pandits. The Government did not take any action but within a short period the movement succeeded in changing the views of the people altogether in the matter. Education and economic condition also helped considerably in eradicating the evil. Polygamy at present is practically unheard of amongst the Hindus.

(1) The Association which has rendered signal service to the cause of widow remarriage in Bengal is the *Kalikātā Bidhabā bibāha Sahāyak Sabhā*. It was founded in 1925 by the Sir Gangaram Trust of Lahore. The trust still finances the association. Between 1925 and 1932 the Association has altogether married 4296 widows. In 1933, 781 widows belonging to various castes were married (65 belonging to the Brahmin caste).

APPENDIXES.

I

**NUMBERS OF WORKERS IN EACH OCCUPATIONAL SUB-CLASS
AND THEIR PERCENTAGE ON TOTAL POPULATION IN
CALCUTTA WITH SUBURBS:**

Occupational Sub-class	1921 Population 1,132,246			1931 Population 1,260,709		
	Number of workers	P. c. of total population	P. c. of females	Number of workers	P. c. of total population	P. c. of females
I. Exploitation of animals and vegeta- tion.	27,389	2'42	11'95	17,017	1'34	9'34
II. Exploitation of minerals.	78	0'01	2'56	93	0'01	6'45
III. Industry.	150,899	13'33	7'60	113,786	9'03	6'38
IV. Transport.	68,583	6'06	1'59	57,629	4'57	1'58
V. Public force.	6,727	0'59	—	7,545	0'60	—
VI. Trade.	115,962	10'24	7'55	100,609	7'98	3'67
VII. Public ad- ministration.	16,873	1'49	1'35	21,058	1'67	0'59
VIII. Profession and liberal arts.	29,734	2'63	8'51	30,353	2'41	9'03
IX. Persons liv- ing on their income.	5,084	0'45	33'73	11,877	0'94	14'02
X. Domestic Service.	75,576	6'67	25'74	100,304	7'96	14'63
XI. Misc. occu- pation.	129,264	11'42	2'72	157,923	12'53	3'54
XII. Unpro- ductive.	23,397	2'07	68'19	15,145	1'20	57'34

II

**NUMBERS PER TEN THOUSANDS OF WORKERS OF BOTH SEXES
AND NON-WORKING DEPENDENTS, IN CALCUTTA WITH
SUBURBS AND IN HOWRAH:**

	Calcutta				Howrah			
	1921		1931		1921		1931	
	Males	Females	Males	Females	Males	Females	Males	Females
I. Workers ...	7,686	1,810	6,883	1,149	7,595	1,827	4,976	1,097
Earners ...			6,841	1,146			4,957	1,092
Working dependents.			42	3			19	5
II. Non-working dependents.	2,314	8,190	3,117	8,851	2,405	8,173	5,024	8,903

III

THE NUMERICAL STRENGTH

OF THE FOLLOWERS OF DIFFERENT RELIGIONS.

	Calcutta.	Suburbs in 24 Perganas.	Howrah City.
<i>All religions</i>	— 1,196,734	... 63,975	... 224,873
Hindu	— 822,293	... 49,693	... 173,613
Muslim	— 311,155	... 12,478	... 48,286
Christian	— 47,558	... 915	... 2,517
Sikh	— 4,705	... 0	... 164
Jain	— 3,185	... 9	... 57
Buddhist	— 3,021	... 157	... 49
Jew	— 1,829	... 0	... 84
Confucian	— 1,363	... 0	... 0
Zoroastrian	— 1,199	... 0	... 0
Tribal	— 426	... 714	... 103

PRIMITIVE TRIBES.

	Total	Hindu.	Tribal.	Christian.	Buddhist.
Bengal —	1,781,723 ...	1,056,098 ...	528,975 ...	29,457 ...	187,193
Calcutta —	3,175 ...	1,693 ...	426 ...	963 ...	93

		HINDUS.	MUSLIMS.
Bengal —	21,155,972	...	27,810,100
Calcutta —	822,293	...	311,155

IV

**PROPORTIONS PER MILLE OF THE FIVE MOST
NUMEROUS HINDU CASTES:**

	Brahman.	Kayastha.	Nama- sudra.	Mahishya.	Raj- bangshi.
Bengal —	65 ...	70 ...	94 ...	107 ...	81
Calcutta —	193 ...	195 ...	5 ...	56 ...	2

CHAPTER V

GENERAL EDUCATION

INDIGENOUS SYSTEM OF EDUCATION.

The details collected at the beginning of the 19th Century through efforts of some officials appointed by the Government show that the percentage of literate people in Bengal was not negligible. According to the estimate of Rev. Adam (1835) the number of indigenous schools in Bengal and Bihar was something over 100,000. The calculation was approximate but Adam recorded that "the system of village schools is extensively prevalent, that the desire to give education to their male children must be deeply seated in the minds of parents, even of the humblest classes, and that these are the institutions, closely interwoven as they are with the habits of the people and the customs of the country."

Vernacular Schools

The number of these indigenous schools in Calcutta was considerable. A minute enquiry instituted in 1818-19 by the Calcutta School Society showed that within the legal limits of Calcutta the number of such schools was 211 in which 4,908 children received instruction. This figure represented about one-third of the number of the Bengali children capable of receiving instruction. In 1821, of these schools 115, containing 3,828 scholars received books from the School Society, and were examined and superintended by its officers and agents while 96 schools containing 1,080 scholars, continued entirely unconnected with the Society. In 1829 the number of schools in connection with the Society had been reduced to 81. *The Calcutta School Book Society* was founded in 1817 with the object of the preparation and gratuitous supply of works useful in schools and seminaries. The success of this Society led to the foundation of another. *The*

Calcutta School Society was started in 1818 with the object of encouraging the vernacular education already prevalent in the country. The improvements introduced by it were various: "Printed instead of manuscript school-books are now in common use. The branches formerly taught are now taught more thoroughly, and instruction is extended to subjects formerly neglected, *viz.*, the orthography of the Bengali language, geography and moral truths and obligations. The mode of instruction has been improved. Formerly the pupils were arranged in different divisions according as they were learning to write on the ground with chalk, on the palm-leaf, on the plantain-leaf, and on paper respectively, and each boy was taught separately by the school-master in a distinct lesson. The system of teaching with the assistance of monitors, and of arranging the boys in classes, formed with reference to similarity of ability or proficiency, has been adopted."

The Society further organised a system of superintendence by the appointment of a Pundit and a Sircar, to each of the four divisions into which the schools were divided. It also arranged for examinations, both public and private. The measures adopted by the Society for the improvement of schools received special approbation from the Court of Directors and the Society was given a grant from the Government. The activities of the Society however became very limited since 1833.

The number of Institutions of Hindu learning in Calcutta and the district of 24-Perganahs was considerable. The number of such institutions in Calcutta in 1818 was 28 which are mentioned by name. There were probably a few more which were not taken notice of. The *Nyaya* and *Smriti Shastras* were principally taught in these Institutions. These colleges were situated in the residences of Pundits in the following localities of Calcutta :

Hati-Bagan	...	...	...	6
Ghoshalu-Bagan	...	...	...	1
Shikdarer-Bagan	...	...	...	1

Bag-Bazar	...	...	...	2
Talar-Bagan	...	...	...	1
Lal-Bagan	...	...	...	2
Shimla	...	...	...	3
Huree-Tukee-Bagan	...	...	...	1
Arukooles	...	...	...	3
Thunthuniya	...	...	...	2
Mulunga	...	...	...	1
Shova-Bazar	...	...	...	1
Veerupara	...	...	...	1
Italee	...	...	...	1

Mr. Ward says that 173 students were actually getting their training in these colleges.

Hamilton states in 1801 that within the limits of 24-Perganahs excluding Calcutta there were about 190 Seminaries in which Hindu Law, Grammar and Metaphysics were taught.

The Seminaries. These institutions were maintained by the voluntary contributions of rich Hindus and the produce of charity lands, the total annual expense being Rs. 19,500.

Adam after making a thorough investigation into the condition of education in Calcutta and the different districts of Bengal submitted to the Government that the "existing native institutions from the highest to the lowest, of all kinds and classes, were the fittest means to be employed for raising and improving the character of the people—that to employ those institutions for such a purpose would be the simplest, the safest, the most popular, the most economical, and the most effectual plan for giving that stimulus to the native mind which it needs on the subject of education, and for eliciting the exertion of the natives themselves for their own improvement, without which all other means must be unavailing."

Adam thus recommended an improvement of the Vernacular Schools as they were based "on the old municipal system of the Hindus, by which each village had its chief, its accounts, its priest, smith, carpenter, potter, barber, washerman, poet, doctor, and though last,

not the least, its village or hedge schoolmaster, called Guru Mahashay. The village system was a brotherhood."

It was rather unfortunate that Adam's recommendation based on very sober judgments was rejected by the Calcutta Council of Education as "almost impracticable." The Council was of opinion that "efforts should be at first concentrated to the chief towns or Sudder stations of districts, and to the improvement of education among the higher and middling classes of the population."

Mr. Adam resigned his office in disgust and the number of vernacular schools in the country gradually dwindled away for want of support. The effect of this negligence was so far-reaching on the literacy of the country that when an estimate of it was taken by the Inspector of Schools in 1861 it was found out that about three persons only per every hundred in the country was literate. Various efforts were subsequently made to improve the condition of vernacular schools but to no appreciable effect.

The first Government College to be started was the *Calcutta Madrasa*. It was founded by Warren Hastings in 1790 with the object of imparting instruction in Arabic as well as Persian. Persian was still the court language of the country. Public help was not wanting in financing the Institution as Maharaja Nobokissen came forward with the handsome donation of Rs. 300,000. The *Calcutta Madrasa* is still perpetuating its old traditions. It still affords Moslem students not only of Bengal but also of other Provinces facilities for instruction in advanced Islamic courses.

**The Govt. steps
for impart-
ing oriental
learning.**

Warren Hastings was willing to accord the same patronage to the Hindu Pandits. But the *Sanskrit College* was not founded till 1824 when Lord Amherst became the Governor-General. But more important measures were taken in the meantime to introduce English education to the youth of the country.

ENGLISH EDUCATION.

The greatest advocate of English education was Macaulay (afterwards Lord Macaulay) who came to Calcutta as the first Law Member of Governor-General's Council. He expressed his views in a minute dated the 2nd February 1835 in the following manner :

"I think it is clear that we are not fettered by the Act of Parliament of 1813, that we are not fettered by any pledges expressed or implied, that we are free to employ our funds as we choose, that we ought to employ them in teaching what is best worth knowing, that English is better worth knowing than Sanskrit or Arabic, that the natives are desirous to be taught English and are not desirous to be taught Sanskrit or Arabic, that neither as the language of law, nor as the language of religion has the Sanskrit or Arabic any peculiar claim on our encouragement, that it is possible to make the natives of this country thoroughly good English scholars, that to this end our efforts ought to be directed."

As early as 1823 Raja Ram Mohan Ray made a similar suggestion to Lord Amherst in an open letter. He resented the Government measure of establishing a new Sanskrit School at Calcutta of the old type and recommended a more liberal and enlightened educational policy to the Government "embracing Mathematics, Natural Philosophy, Chemistry, Anatomy, with other useful Sciences..... employing a few gentlemen of talent and learning educated in Europe, and providing a College furnished with necessary books, instruments and other apparatus." The Government however did not move in the matter till 1835 when Macaulay sent his famous minute.

On the 7th March, 1835 the Governor-General in Council passed a resolution directing that all available funds should be henceforth employed imparting to the native population a knowledge of English literature and Science through the medium of the English language. Thus for the first time a decisive step was taken

**The
Govt. Steps.**

to deprive the country of a national education and a new system of education was imposed on them in order to make them, in the words of Macaulay himself, "a class who may be interpreters between us and the millions whom we govern—a class of persons, Indian in blood and colour, but English in tastes, in opinions, in morals and intellect."

The College of Fort William was established in 1800 for the study and training of civilians from 'Home' in the language and literature of the country where they were to work.

The College of Fort William. Since then it became incumbent on the Civilians to pass an examination in the laws and regulations and the languages of the country. Reverend William Carey was appointed teacher of the Bengali and Sanskrit languages in April 1801 and was made the Professor of those languages on the 1st January 1807. Besides Rev. Carey a number of Pundits were employed in the Bengali department during the first eighteen years of the existence of the College. A number of text-books in Bengali were composed and published and besides a Grammar and Dictionary of the Bengali language by Rev. Carey himself.

Several schools on western models came into existence through private efforts at about the same time. About 1780 one Mr. Hodges advertised a school near the Armenian Church for teaching, reading and needle-work. A "boys' boarding school" beyond Chitpore Bridge was advertised by another. In 1781 Mr. Griffith had a boarding school in his garden house near Baitakhkhana. A school for boys was opened by Mr. Archer in 1800 and his effort met with success. Other schools, Farell's Seminary and the Dharramtallah Academy, came into existence about the same time. The founders of these schools showed the way and a number of other schools on the same model was soon started, through the efforts of enterprising individuals. The Oriental Seminary was established in 1823 and it gave sound English education unalloyed by missionary influences. Derozio received his lessons there.

But the premier Institution which served the purpose of imparting

English education to Young Bengal was the Hindu College originally called the *Hindu Mahavidyalaya*. The college was founded on the 17th January, 1817 through the enthusiasm and industry of David Hare and Raja Ram Mohan Ray. The others who joined hands with them were Sir Hyde East, Maharaja Tej Chandra Bahadur, Gopee Mohan Tagore, Joy Kissen Singh, Raja Gopee Mohan Deb and Ganga Narain Das. For several years the College was in a precarious condition till in 1823 through the intervention of David Hare the Government allowed it to stand on the ground acquired for the erection of the Sanskrit College building. In 1825 the college was subjected to the supervision of the President, Committee of Education. The subsequent career of the Institution was glorious. Its boys became the pioneers of all movements which agitated the country. In 1855 the College was taken over by the Government, its name changed into that of the Presidency College and chairs for moral and mental philosophy, logic, natural history, astronomy, and geology were established.

The education of girls was not entirely neglected when the indigenous system of education was prevalent in the country. But no serious step was taken to impart education on western lines to the girls before the beginning of the 19th century. Some girls' schools had already been founded in Calcutta through private efforts in the last quarter of the 18th Century but they were mostly meant for European girls. In 1819 the Calcutta Juvenile Society was founded for supporting the Bengali Female Schools. It established within a short time a full-fledged girls' school and began to give instruction in reading, writing and needle-work. In 1822 the Ladies' Society for native female education was established.

J. E. Drinkwater Bethune was instrumental in giving a real start to female education in Bengal. A girls' school named after him was founded in 1850. Some of the leading gentlemen of the time like Pandit Iswar Chandra Vidyasagar, Peary Chand Mitter and Peary Chand Sarkar identified themselves entirely with the cause of female education and

public sympathy was not at all wanting. The contemporary Journals expressed every sympathy for its cause.

PRESENT STATE OF EDUCATION.

Since the institution of the present system of education in the Province the number of schools both primary and secondary has gradually grown. But the state of education is still far

Primary Education. from satisfactory.

In Calcutta itself the Corporation, as we have already seen, has made rapid strides since 1923 in imparting primary education to the people. Some of the municipalities in the districts have also contributed in no negligible manner to the spread of education for some time past. According to the Government report the number of primary schools for boys and girls in the Province rose in 1932-33 from 61,162 to 62,719. The pupils attending primary schools of all types also rose from 2,116,278 to 2,192,130. This shows an increase of 3.6 per cent in one year. As far as Calcutta is concerned there were on the 31st March 1933 about 483 primary schools. Amongst the primary schools in the Province there are about 1,187 night schools which are more or less in an experimental stage.

The Government has before it an elaborate scheme for introducing primary education in the rural areas (*The Bengal Primary Education Act, 1930*) but it has not yet been introduced on account of acute financial and economic depression. Pending the introduction of the full scheme the Government have sanctioned an optional scheme for such of the District Boards as will agree to pay their allotment for primary education. Some of the District Boards have agreed to participate in this optional scheme which will come into operation from 1st April, 1934. The Calcutta Corporation has before it a scheme for the introduction of free and compulsory primary education in one of the Wards of the City at the first stage without levying any education cess and the Government has recently approved the scheme. When these schemes are adopted the boys and girls will receive primary education on a larger scale.

The number of Institutions for Secondary Education in the Province stands as follows:—

		1931-32	1932-33
Secondary Education.	High English Schools ...	1,157	1,186
	Middle English Schools ...	1,904	1,873
	Middle Vernacular Schools ...	62	62
	Number of Students ...	451,672	456,175

A number of high and middle English schools have arrangements for giving manual instruction to their pupils. Some of the schools have introduced the teaching of subjects like dyeing, weaving, carpentry, smithwork etc. A scheme for the introduction of agricultural classes in the non-Government secondary schools has been sanctioned by the Government in 1927. In pursuance of this scheme a number of schools sent some teachers for training to the Government Agricultural Farms. These teachers on their return to their respective schools have commenced the proposed work in their schools.

Out of 18,435 boys who appeared at the Matriculation Examination in 1933, 12,140 passed. The number of candidates has increased since then.

The total number of Colleges in the Province were 51 of which 45 are for men and 6 for women. Some of the Colleges for men, the Vidyasagar College and the Asutosh College have opened Women's Department and one of the Girls' High Schools namely the Victoria Institution has started Intermediate Classes for girls. Out of the total number of Colleges only 10 are maintained by the Government. The number of students studying in the Colleges is indicated by the following figures :

		1931-32	1932-33
Hindus	...	16,516	17,090
Moslems	...	2,574	2,818
Others	...	288	451
		<hr/> 19,378	<hr/> 20,359

At the close of the year 1932-33 there were in Bengal 18,538

educational institutions for Indian girls. The number of girls receiving education during that year was 500,307. The number of institutions and pupils have been steadily increasing. During the same year the number of Colleges for girls rose to 6 including the Women's Section of the Vidyasagar College. Intermediate classes were started in the Victoria Institution, Calcutta. The women's Colleges registered 508 students on the 31st March 1933 as compared to 336 of the previous year. Besides these there were 346 girls reading in Arts Colleges for men and in the University Classes.

**Education of
Indian Girls
and Women.**

The number of High English schools for girls rose from 36 of the previous year to 39 in 1932-33. Of these schools 5 only are managed by the Government. The number of Middle English schools was 57 and that of the primary schools was 18,067.

There are two Government Training Colleges one at Calcutta, and the other at Dacca for the training of male teachers. In both these Institutions there were about 151 pupils on the 31st March 1933. All the students read the B. T. Course. Besides these there were 5 normal or first grade training schools in the Presidency. All these schools are maintained by the Government. These schools registered 414 pupils on the 31st March 1933. One of these training schools namely the Hooghly Training School imparts instruction in first aid and ambulance work.

**Training of
Teachers.**

There are also two other types of training schools for teachers namely the Guru and Muallim training schools. These schools which train teachers of boys' primary schools and maktabas are 86 in number with 2,179 students. Of these 80 are managed by the Government, one by the Corporation of Calcutta and the rest by the Missionary Societies. Of the Government Guru Training Schools 31 were of new type and the rest of old type. It is contemplated by the Government to replace the old type training schools by the schools of new type.

Pending the establishment of a Women's Training College by the Government women teachers of Secondary schools continue to receive professional training at the training departments attached to the

Diocesan College and Loreto House. The number of training schools and classes which afford training facilities to women teachers employed in primary schools and the lower classes of secondary schools are 10 of which 3 are directly managed by the Government and the rest by the Christian and Brahmo Missions.

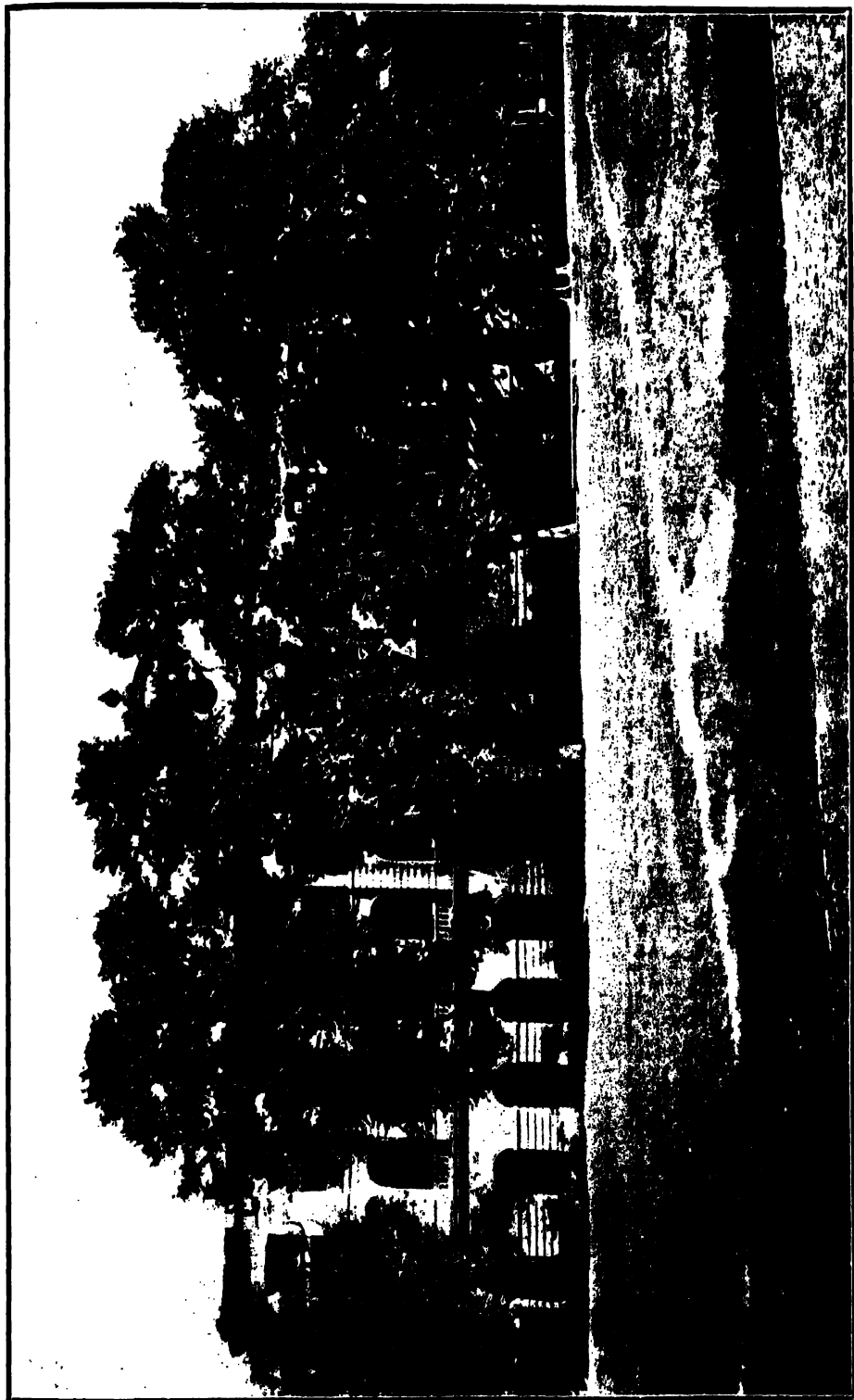
PRESIDENCY COLLEGE

The Presidency College was formally established on the 15th of June, 1855, under orders from the Honourable the Court of Directors of the East India Company, though there is evidence that it had already started informally a year previously. The circumstances of its establishment connect it closely with the Hindu College or Mahavidyalaya, founded by a number of Hindu gentlemen with the aid of Sir Edward Hyde East, Chief Justice of the Supreme Court, and opened on the 20th of January, 1817. This origin connects the Presidency College also with the Hindu and Hare Schools, and more specially with the former, which continues the Junior Department of the Hindu College, as the Presidency College continues the Senior. The graduate scholarships attached to the Presidency College, of which particulars are given below, are a consequence of this connection, being derived from the Hindu College Fund.

Presidency College is thus in its beginnings carried back to the first efforts to promote liberal education in British India, and is associated with David Hare and Raja Ram Mohan Roy, who were inspirers of the movement which led to the foundation of the Hindu College.

From 1855 to 1910 the Presidency College was administered by the Education Department under the Director of Public Instruction, Bengal. In 1909 a Governing Body was constituted in accordance with Chapter XIX of the University Regulations, and met for the first time on Tuesday the 8th of March, 1910.

Post-graduate teaching is now under the control of the University, but 30 members of the staff are also Post-graduate Lecturers.



PRESIDENCY COLLEGE

The College is affiliated to the B.A. Honours stage in English, Philosophy, History, Political Philosophy and Political Economy, Sanskrit, Pali, Persian and Arabic, and in Vernacular Composition; and to the B.Sc. Honours stage in Mathematics, Physics, Chemistry, Physiology, Geology and Botany.

The Scholarships and Prizes.—There are 75 part-free studentships attached to the College. Of these, 60 of the value of Rs. 7 per mensem are awarded to Under-graduate students, and 15 of the value of Rs. 8 per mensem to Post-graduate students.

A number of scholarships, paid out of the income of the Presidency College Graduate Scholarship Fund, are attached to the College. The fund originated with the subscriptions contributed in 1816 for the Hindu College; in 1863 it was amalgamated with three hitherto separate funds, which commemorated men eminent for their services to the cause of education. The scholarships are tenable by graduates of the Presidency College in Arts or Science for two years after taking the B.A. or B.Sc. degree.

The Library.—The Presidency College Library contains about 45,000 volumes. The books in the Library are arranged on the principles of the Dewey system of classification, adapted to the special requirements of the Presidency College. Books and periodicals in Science and Mathematics are stored in the Peake Science Library, situated in the Baker Laboratory building.

The catalogue of the Library is divided into three parts: Part I. contains books in Philosophy, Religion, Sociology and Philology; Part II, books on Science and Mathematics, including Science reference books and periodicals; Part III, books in Arts, Literature, Biography and History, and Reference books and periodicals.

Athletics.—The College Athletic Club provides for football, cricket, tennis, hockey and gymnastics; representatives usually enter for some of the events at the Annual Indian Sports Meeting at Marcus Square, and at the Inter-Collegiate Sports, and the College holds its own Sports Meeting as well. The ground is a part of the Calcutta Maidan, but a field adjacent to the College buildings is now also

available. A patent stone tennis court, three grass courts and a cricket practice pitch have already been made in the College grounds.

The management of the club is largely in the hands of the students. The Principal, who is President of the club, nominates a Treasurer from among the members of the staff, who supervises all expenditure and guides the students in matters of policy. The Treasurer acts as Chairman of the Executive Committee. This consists of the Captains, Vice-Captains and Secretaries of the various games who are elected in the case of each particular game by those members of previous year's team who still remain members of the College; in the case of tennis, there being no representative team, these officials are elected by the Executive Committee. Colours are awarded for particular merit in each game.

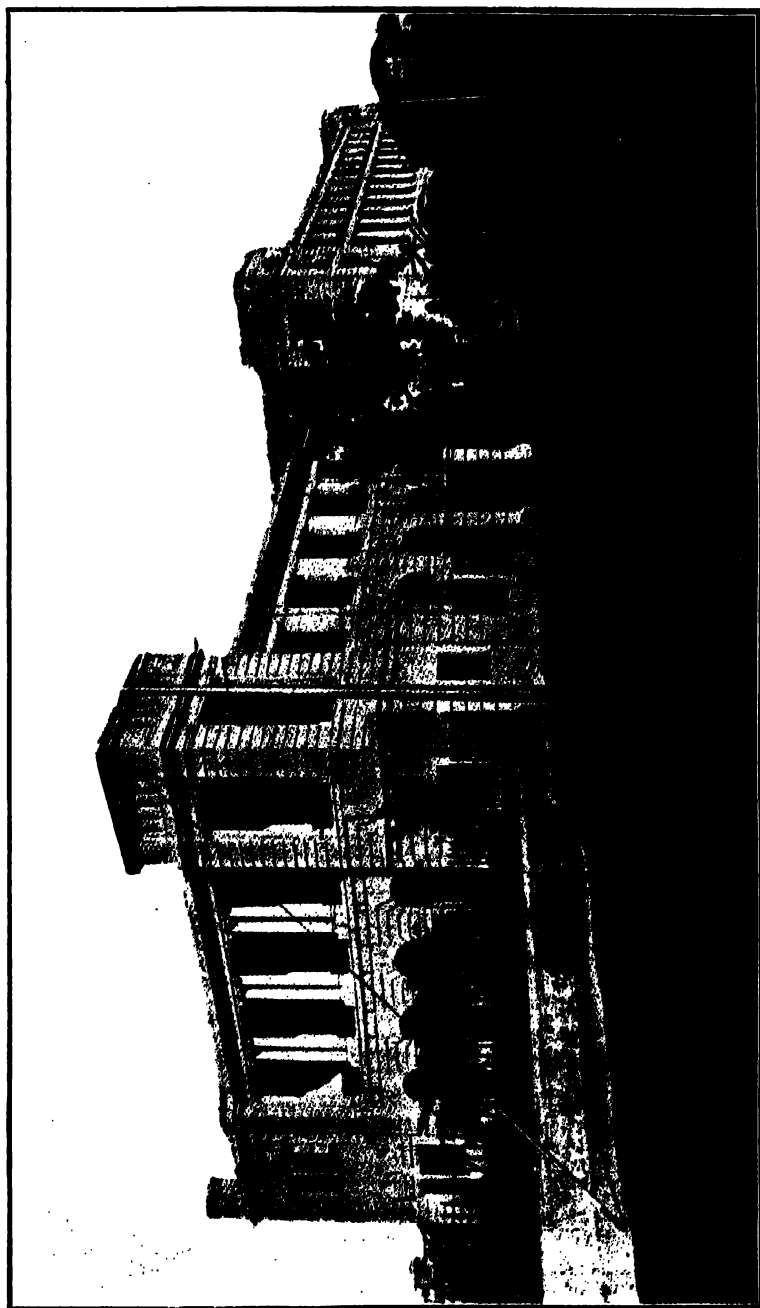
Two cricket prizes are given each year, one for batting and one for bowling, provided a sufficiently high level of excellence is attained.

College Union.—All the 1200 students who read in the Presidency College belong to the College Union, which is intended for the promotion of social life in the College. A very well-edited Magazine is published under the auspices of the Union three times a year.

ST. XAVIER'S COLLEGE.

St. Xavier's College, which is under the direction of the Society of Jesus, was established in 1860 in an imposing building situated on Park Street. The stately portico, the hall and adjoining chapel are a century old and were once part of the "Sans Souci Theatre." The premises are among the largest of any private educational institution in Calcutta. The ample playgrounds are a special feature of St. Xavier's.

Besides its University Department, the College has a School Department averaging about 750 pupils. They are mostly of European descent. A good number of Indian boys, belonging to the leading families in Bengal, are educated in this School. The curriculum of studies is based on the European Code and includes the Cambridge School Certificate as its final examination.



BAKER LABORATORY,
PRESIDENCY COLLEGE.

■

The University Department teaches up to the B.A. and B.Sc. degrees. Its students number about 800, the most cosmopolitan set of perhaps any Art College in Bengal, for, besides a large number of Hindu and Mahomedan students, there are some 50 Anglo-Indians, as many Indian Christians, and a sprinkling of Jews, and Parsees and Buddhists.

For the last 60 years St. Xavier's has enjoyed a high reputation for Science, due in particular to the efforts of Rev. Fr. Lafont S.J., who for nearly 40 years was a great pioneer of scientific education in Calcutta—a popular lecturer universally esteemed, always the first to acquaint the public with the latest new inventions. With the help of numerous friends, chiefly from among the Indian nobility, he succeeded in getting together a fine collection of Physical Science apparatus. Since his death in 1908, the laboratories have steadily expanded, and a variety of new apparatus, including a large wireless installation, has been added to the existing collection.

The Chemical department is also well equipped, specially for the more difficult branches of the Honours' course. The demand for admission into this department is always very great.

The College is fortunate in possessing an Astronomical Observatory, rich in instruments of great value., Its 9 inch refracting equatorial and its 10 inch reflector rank among the largest telescopes in India. The Observatory affords a unique opportunity to students of acquiring a taste for experimental Astronomy.

For nearly 50 years the late Fr. Francotte enjoyed a wide reputation for his meteorological work; but since his death 1923, the Meteorological Observatory has been closed.

The various libraries in the College contain together nearly 27,000 books. The most remarkable is the Goethals' Indian Library with about 8,000 volumes, collected by the late Dr. P. Goethals, Archbishop of Calcutta, and bequeathed to the College. The books dating from the Portuguese and Dutch periods form a unique treasure, as also the numerous plates—coloured, photographic or engraved—on Archaeology, Enthnology, Botany, Scenery, etc.

In the field of sport St. Xavier's hold one of the foremost positions among educational institutions. To mention but one or two salient points. During the 25 years the presidency Sports have been run, the School's Challenge Shield was won 11 times by the School Department. At the Inter-Collegiate Sports almost every year the College Students carry off the Best Man's Cup or the trophy that goes to the Best College.

THE SCOTTISH CHURCH COLLEGE.

The history of this College, which is situated in Cornwallis Square, may be traced back to 1830, when the General Assembly's Institution was founded by the Rev. Alexander Duff. In 1843, however, Dr. Duff separated from his College and established another College under the name of the Free Church of Scotland Institution. These two Institutions were reincorporated on 1st June 1908, as "The Scottish Churches College" and later on "The Scottish Church College". It is one of the best Institutions managed by missionaries and has done much for the spread of education among Indians. Its hostels are also well managed, and special attention is paid to athletics.

OTHER COLLEGES AND SCHOOLS IN CALCUTTA.

(1) *Sanskrit College*, 1, College Square.—It is one of the earliest Government institutions founded in 1824, in the early days of the East India Company. Its object was to encourage the study of Sanskrit, but now an English Department up to the B.A. Standard has been added. It was connected with scholars like Iswar Chandra Vidyasagar, Mahesh Chandra Nyayaratna and Hara Prasad Sastri. A Veda class has been opened at the expense of the late Mohanta Maharaj of Tarakeswar. It contains many valuable MSS.

(2) *Bethune College*, 181, Cornwallis Street.—It was founded by the Hon'ble J. E. Drinkwater Bethune and Raja Daksinaranjan Mookerjee. Mr. Bethune, whose name the College bears, maintained it at his own cost up to 1851. The Marquis of Dalhousie also supported it from 1851-1856, when it was taken over by the Bengal Government. It is the foremost Girls' College in the Province.

(3) *Ripon College*, this was founded in 1880 and was then called the "Presidency School." Sir Surendra Nath Banerjee, who built up the College, acknowledges in his famous book of memoirs, *A Nation in Making*, his debt to many important persons, among whom we find Sir Henry Harrison and Sir Henry Cotton. Sir Surendra Nath ceased to take active part in the work of the College in 1913. The College prospered, in spite of this loss, under its famous Principal, the late Mr. Trivedi, who died in 1915. The College is one of the largest in Calcutta.

(4) *Vidyasagar College*, 39, Shankar Ghose Lane.—It was founded by the late Pandit Iswar Chandra Vidyasagar and was the first attempt by an Indian to run a College. It was affiliated to the University in 1872. Sir Surendra Nath Banerjee began his career as a Professor of this College.

(5) *City College*, 102-1, Amherst Street.—It has grown out of the City School founded in 1879 and was formally opened by Lord Ripon in 1884. It is under the management of the "Brahmo Samaj Education Society." Its object is "to promote the cause of Education in the highest and widest sense, to make that Education—comprehending the mind, heart and body, and founded on the Theistic basis—conduce to the good of man and the glory of God." Its well-managed Gymnasium has in recent years turned out many good athletes.

(6) *Bangabasi College*, 25-1, Scott Lane.—It has also grown out of the Bangabasi School founded in 1886 by Principal G. C. Bose. The College Department was added next year. It possesses Physical, Chemical and Botanical Laboratories; and also publishes a magazine, the "Bangabasi College Magazine."

(7) *St. Paul's Cathedral Mission College*, 33-1, Amherst Street.—It was founded in 1865 under the name of the Cathedral Mission College at 22, Mirzapur Street. In 1914 it was affiliated to the B.A. standard and the name was changed to the present one.

(8) *Diocesan College*, 47, Elgin Road.—It is one of the Colleges for the education of Indian girls. It has a competent staff of lady teachers, both Indian and European. The Principal is a Sister of the Clewer Order. It was affiliated to the University in 1907. The college department has been recently closed.

(9) *Asutosh College*, 147, Russa Road South.—It was originally started under the name of South Suburban College in 1916. After the death of Sir Asutosh Mookerjee, the name was changed to the present one. It is the only College on the Bhowanipur side.

(10) *David Hare Training College*, 25-3, Ballygunge Circular Road.—It was started by the Bengal Government in 1908 for the training of teachers. The course is of one year and includes both theoretical and practical teaching.

(11) *Narasinha Dutt College*, Howrah.—It was founded by Babu Suranjan Dutta in memory of his father in 1923. It is situated at No. 129, Belilios Road, Howrah.

(12) *Islamia College*, 8, Wellesley Street.—This is a Government College, opened in 1926 for the benefit of Moslem students, and is affiliated up to the B.A. in Arts, and to the I.Sc. in Science. The building is one of the architectural sights of the City.

(13) *St. Joseph's College*, 69-70, Bow Bazar Street.—It was established about 82 years ago for the education of Anglo-Indian boys. It is under the management of Irish Christian Brothers, who devote themselves entirely to education.

(14) *Loreto House*, 7, Middleton Row.—It was founded under the direction of the Sisters of Loreto in 1842. It is connected with the University since 1889.

(15) *La Martiniere College*, at the corner of Lower Circular Road and Loudon Street.—It was founded by General C. Martin, who bequeathed Rs. 2,00,000 for the school, and a further sum of Rs. 1,50,000 for its permanent buildings. The schools—one for boys and the other for girls—were opened in 1836. The finances have recently been materially improved by the munificent donation of Rs. 11,00,000 from the late Sir Paul Chater.

(16) *St. Thomas' School*, Free School Street.—It was founded in 1789 for the education of indigent Christian boys. It has a Girls' Branch at Kidderpur.

(17) *Loreto Convent for Girls*, Convent Road, Entally, under the Loreto Sisters, has a free department.

(18) *Pratt Memorial School for Girls*, 168, Lower Circular Road,—is under the Clewer Sisters.

(19) *St. James' College for Boys*, 155, Lower Circular Road, was founded in 1867.

(20) *Armenian College*, Free School Street—is for the education of Armenian boys.

(21) *Bishop's Collegiate School*, 224, Lower Circular Road—was started at the request of Bishop Middleton in 1820. It is now amalgamated with St. Mary's High School under the name of Cathedral Mission High School.

(22) *Calcutta Madrasah*, 21, Wellesley Square—was originally founded by Warren Hastings. It is for the education of Moslem students.

(23) *Hare School* (opposite Presidency College, 87, College Street)—is associated with the name of David Hare.

(24) *Hindu School*, 1, College Square—is one of the best schools for the education of Indian boys.

(25) *Mitra Institution*—has its main school at Harrison Road, and a branch at Bhowanipur.

(26) *Keshab Academy*—bears the name of the Brahmo Leader, Keshab Chandra Sen.

(27) *City School*, Mirzapur Street—was founded in 1879.

(28) *South Suburban School*—is one of the oldest schools of Bhowanipur, being established in 1874.

(29) *Oriental Seminary*, 336, Upper Circular Road,—is also an old school founded in 1829.

(30) *Victoria Institution* founded in 1891 by Keshab Chandra Sen, 78-B Upper Circular Road.

THE UNIVERSITY EDUCATION.

CALCUTTA UNIVERSITY.

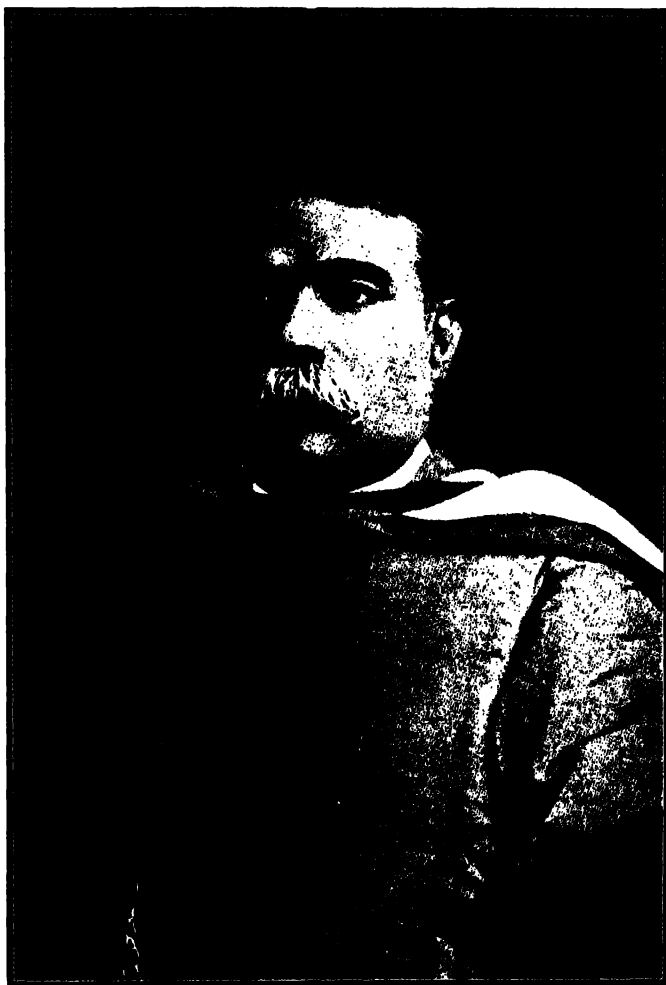
The University of Calcutta was founded, along with the Universities of Bombay and Madras, by an Act of Incorporation (Act No. 11 of 1857), passed on the 24th January, 1857. At

Foundation of the University. its inception, the University adopted the form, government and regulations of London University.

The function of the University was, as defined in the preamble of this Act, to ascertain, by means of examination, the persons who have acquired proficiency in different branches of Literature, Science and Arts, and to reward them by academical degrees, as evidence of their respective attainments and marks of honour. The Body Politic and Corporate of the University then consisted of the Governor-General of India as Chancellor, one nominated Vice-Chancellor, the *ex-officio* Fellows (including, among others, the Lieutenant Governors of Bengal and the North-Western Provinces) and Ordinary Fellows, nominated by the Chancellor, and appointed for life, the whole number of Fellows, exclusive of the Chancellor and the Vice-Chancellor, being not less than thirty. The Executive Government of the University was, as usual, vested in a Syndicate, consisting of the Vice-Chancellor and ten representatives of the Faculties, which were four in number, *viz.*, the Faculty of Arts, the Faculty of Law, the Faculty of Medicine, and the Faculty of Engineering.

The Registrar was the only officer appointed by the Senate for the administration of the office. In 1885, the post of a whole-time Assistant Registrar was created for helping the Registrar in office work.

The Degrees of the University. The Degrees which the University was authorised to confer, after examination, comprised those of the Bachelor of Arts, Master of Arts, Bachelor of Law, Licentiate of Medicine, Doctor of Medicine and Master of Civil Engineering. As a matter of fact, the examinations which were held for the first time were the Entrance Examination, Bachelor of Arts Examination Bachelor of Law Examination and the 1st Examination of the Licentiate Medicine and Surgery, with Honours



SIR ASUTOSH MOOKERJEE,

Examination in Law. The list of Institutions, authorised to present candidates for the various examinations, included seven Government and six non-Government Colleges, located in Calcutta, Serampore, Hooghly, Krishnagar, Dacca and Berhampur, and seventy-nine schools in different provinces. There being no limits of territorial jurisdiction, it was open to the University and customary for it to admit to its examinations candidates from such distant places as Agra, Ajmere, Bareilly, Benares, Burma, Central Provinces, Ceylon, Delhi, Lahore, Nepal, and Rajputana.

Three years later following the creation of the University, a Supplementary Act (known as Act No. XLVII of 1860) was passed, by which the University was authorised to confer, in addition to those already provided for, such degrees and to grant such Diplomas or Licenses in respect of Degrees as the Body Corporate of the University might appoint by any bye-laws or regulations, subject to the approval of the Governor-General in Council.

As a result of this Act, the First Examination in Arts, the License in Law Examination and the License in Civil Engineering Examination were instituted in 1861,—the first to test the knowledge of students at an intermediate stage between the Entrance and the B.A. Examinations, and the second and the last to qualify persons for the legal and engineering professions without requiring them to undergo any Degree Examinations.

The want of a permanent habitation for the University had been long felt, and its work had, until 1873, been carried on in rented houses. In 1872, the Government of India came to its rescue and helped it with a building, constructed at a cost of Rs. 4,34,697 which was taken possession of by the University early in 1873. This building, which is known as the Senate House, not only formed the nucleus of the residential properties of the University, but also, for a good many years, housed its offices, meetings, and Convocation, and served the purposes of an Examination Hall. In later years, with the development of the University, an extension of building accommodation had, from time to time, to be made, with the result that the University Buildings now include several commodious structures, such as, the Darbhanga Library Building (for the University Library, Law

College together with its Library, University Offices, as also for examination purposes,—for which its top floor accommodates above 700 candidates), the Hardinge Hostel (for the residence of the students of the University Law College), the Ashutosh Building (for Post-Graduate classes in Arts, Post-Graduate offices, the Lending Library and the Anthropological Museum), and two Science College Buildings—one on the Upper Circular Road and the other at Ballygunge (for Post-Graduate classes in Science, with concomitant Laboratories and Museums), the last-named buildings being the gift of that noble son of Bengal—Sir Taraknath Palit—whose princely donations have helped the University to establish the College of Science and Technology. Towards the construction of the Darbhanga Building, the University received substantial help from the Hon'ble Sir Rameswar Singh, Maharaja of Darbhanga, who contributed Rs. 2,50,000 for the purpose.

By an Act of 1875, the University was empowered to confer the Degree of Doctor in the Faculty of Law upon any person on the ground of his eminent position and attainments, without requiring him to undergo any examination; and the first Degree of D.L. was conferred, *honoris causa*, on His late Majesty the King-Emperor Edward VII (then H. R. H. the Prince of Wales), at a special Convocation held on the 3rd January, 1875, on the occasion of his visit to India. Since the amendment of this Act by an Additional Act in 1884 and the passing of Act No. VIII of 1904, the University has been given the privilege of conferring Honorary Degrees in other Faculties as well, which, under this new Act, include the Faculty of Science also; and among many distinguished persons who have since been the recipients of these distinctions from the University may be mentioned the names of scions of two Royal houses of Europe, viz., H. R. H. George Frederick Earnest Albert, Prince of Wales, (now His Majesty the King-Emperor George V), H. I. R. H. the Crown Prince of the German Empire and of Prussia, and H.R.H. Edward Albert, the present Prince of Wales, on whom the University conferred, *honoris causa*, the Degree of Doctor in the Faculty of Law in 1906, 1911, and 1921, respectively, and those of many great men of different countries and nationalities, such as Dr. Monier Williams, Rev. K. M. Banerjee, Dr. Rajendralala Mitra, Sir Alfred Woodly Croft, Dr. Mahendralal Sircar, Sir Andrew Fraser, Sir Asutosh

Mookerjee, Prof. Arthur Schuster, Sir Subhaiyar Subramaniya Aiyar, Sir Pratulchandra Chatterjee, Sir Gooroo Das Banerjee, Rev. Father Eugene Lafont, Sir Herbert Hope Risby, Surgeon-General Gerald Bamford, Sir Thomas Henry Holland, Sir Praphullachandra Ray, Dr. G. Thibaut, Shams-ul-Ulma Syed Ali Bilgrami, Lt.-Col, Douglas Craven Phillott, Prof. P. Bruhl, Sir Jagadischandra Bose, Prof. Hermann Oldenberg, Dr. A. R. Forsyth, Sir Taraknath Palit, Dr. Paul Vinogradoff, Dr. Hermann Jacobi, Dr. William Henry Young, Sir Rashbehary Ghose, Dr. Rabindranath Tagore, Dr. H. H. Hayden, Dr. Sylvain Levi, Lord Reading, Lord Ronaldshay, Syed Ameer Ali, Prof. A. A. Macdonell, Prof. W. A. Craigie, Sir M. Visveswara, Sir Brajendranath Seal, Dr. R. P. Paranjpye, Dr. G. T. Walker, Sir John Herbert Marshall, Dr. R. Sama Sastri, Prof. S. K. Aiyengar, Prof. H. Stephen, Prof. C. E. Cullis, Rai Bahadur Dineshchandra Sen, Prof. D. R. Bhandarkar, Prof. C. V. Raman, Prof. Abanindranath Tagore, Prof. W. Williams, Sir W. J. Pope and Sir William Ewart Greaves, whose eminent position and attainments in the realms of Literature, Arts, Science, Law, Medicine, and Engineering, have earned for them the Honorary Degrees of Ph.D., D.Litt., D.Sc., M.D. and D.L.

The Universities of the Punjab and Allahabad having been established in 1882 and 1887, respectively, the Calcutta University lost its hold upon the provinces falling within their territorial jurisdiction. Gradually, in later years, with the establishment of several other Universities, specially the Universities of Patna, Dacca, and Rangoon, which were founded in 1917, 1920, and 1921, respectively, and which once formed an integral part of this University, it has been bereft of its dominion in other provinces also. Although the Act of 1904 fixed for the Calcutta University, and that for the first time, its territorial as lying within the provinces of Bengal, Bihar, Orissa, Assam, and Burma, its present limit has since undergone certain changes, with the result that the University now holds sway only over Bengal (excluding the municipal area of the town of Dacca) and Assam, with fifty-four Colleges and about one thousand Schools within them.

An event, which apparently may appear trivial, but which has

great value in the history of the University administration, happened in 1890, when, for the first time, a distinguished son of the soil, Sir (then the Hon'ble Mr. Justice) Gooroo Dass Banerjee was appointed Vice-Chancellor. Since 1906 many other distinguished sons of Bengal have adorned this office, and the University, in its present condition, owes much to every one of them, specially to that great man, Sir Asutosh Mookerjee, who is rightly called the "Father of Calcutta University."

As a result of investigations by a Commission, appointed in January, 1902, at the instance of the Governor-General of India in Council, an Act (Act No. VIII of 1904), amending **The Commission of 1904.** the Law relating to the Universities in British India was passed by the Governor-General of India in Council, and it came into force on the 1st September, 1904. This Act was designed to give effect to the recommendations of the Commission for the re-organisation of the government of the Indian Universities, their assumption of teaching functions, the maintenance of lecture rooms, libraries, museums, laboratories and workshops for the promotion of teaching and research, the institution of University Professorships, Readerships, and Lecturerships, the introduction of a modified system of examination under different Faculties, as also the system of awarding Doctorate Degrees on theses, and more effective supervision by the Universities over the Colleges, as well as more exacting conditions of affiliation. The scope and function of the Universities thus underwent vital changes, they being transformed from mere examining Bodies to teaching and research organisations. The Calcutta University is still governed mainly by the constitution framed under this Act. The Senate, comprising the (official) Chancellor, the (nominated) Vice-Chancellor, the *ex-officio* Fellows and the Ordinary Fellows, constitute the Body Corporate of the University, the number of Ordinary Fellows being raised to a maximum of one hundred, each appointed for five years, out of which ten are elected by Registered Graduates and ten by the Faculties, and the rest nominated by the Chancellor. The elective principle, though on a limited basis, was thus introduced into the University for the first time by this Act of 1904. There is also provision, in the Act for the appointment of Honorary Fellows, which consist of the Benefactors of

the University and Ordinary Fellows who held office at the commencement of the Act but ceased to do so later on. An important change has also been made in respect of the Faculties by the creation of a new Faculty devoted to Science and by the admission of qualified persons, who are not Fellows, to take part in the working of the University as Added Members of the Faculties. The Syndicate is now composed of 15 elected representatives of the Faculties and the Senate, with the Director of Public Instruction, Bengal, as an *ex-officio* Member, and the Vice-Chancellor as Chairman. The power of recommending Examiners and text-books for the various Examinations has been vested in a new Body called the Board of studies, appointed by the Faculties from among their own members. Matters relating to the finances of the University have, as before, been left to the Board of Accounts. The work in connection with the management of the University Library is entrusted to the Library General Committee and the Library Executive Committee. Among other changes, contemplated by the New Act, the provisions for the appointment of University Professors and Lecturers for Post-Graduate Teaching and that of University Readers for the benefit of research students deserve special mention, inasmuch as mainly by this arrangement the University has been given the status of a teaching and research organisation. The question of affiliation of Colleges and supervision of residence of College students together with the question of recognition of schools has been left to the control of the University, with the reservation of final sanction in respect of affiliation of Colleges by Government. The changes introduced in the examinations and curricula of studies for them are also worthy to be mentioned. The Entrance Examination of former times has been replaced by the Matriculation Examination, and the age-limit for the Examination has subsequently been lowered to 15 years; the F.A., B.A. and M.A. Examinations have each been bifurcated into two, namely, the I.A. and I.Sc., the B.A. and B.Sc. (with Honours) and the M.A. and M.Sc. Examinations; two examinations in teaching, viz., the L.T. and the B.T. Examinations have been introduced; the L.M.S. Examination and the next higher Examination for the M.B. Degree—which was also provided for at a later stage—were combined together into the M.B. Examination in three parts—the Preliminary Scientific, 1st and Final M.B. Examinations (which have recently

undergone another change by the institution of five examinations for the M.B. Degree, *viz.*, the Preliminary Scientific, First Second, Third and Final M.B. Examinations); and, in place of the License in, and Master of, Civil Engineering and the Bachelor of Examination in Engineering have been introduced. Provision has been made for the substitution of a part of the M.A. and M.Sc. Examinations by research work, as also for the admission of persons to the Doctorate Degrees under different Faculties on the merits of theses submitted by them. Among other new examinations prescribed under the new Act, or introduced subsequently, may be mentioned the B. Com. Examination, D.P.H. Examination, Examination in the Diploma in Spoken English, Master of Law Examination, Master of Surgery Examination and Master of Obsterics Examintaion. The Examination for the License in Law was discontinued in 1875, and the Bachelor of Law Examination, which was at first bifurcated into two parts, has subsequently been divided into three parts, *viz.*, the Preliminary, the Intermediate and the Final Examinations in Law, and the eligibility of graduates under different Faculties for admission to the Examination has been recognised. In the syllabuses of studies. Vernacular has been given a prominent place and Indian Vernaculars have been prescribed for the M.A. Examination. The subjects of Elementary Mechanics, Elementary Hygiene, Commercial Geography, and Business Method and Correspondence have been included in the curriculum of studies for the Matriculation Examination, Civics, Commercial Geography and Commercial Arithmetic and Elements of Book-keeping for the I.A. Examination, Linguistics for the B.A. Examination, and Anthropology and Experimental Psychology for the Bachelor and Master Degree Examinations. Recently, a change in the Regulations for the Matriculation Examination has been proposed by the University, making provision for the teaching in Vernacular, and for vocational and technical education and abolishing the age-limit for the Examination. The scheme is now under the consideration of Government.

Under the provision of the Act of 1904, a whole-time Registrar and an Inspector of Colleges (to carry on the work of inspecting Colleges) are periodically appointed. Subsequently, in 1917, the appointment of a Controller of Examinations for the conduct of Examinations was

provided and, since then, a separate Office has been maintained for the purpose and the Registrar has been entrusted only with work of an academic nature.

Like the Assistant Registrar in the Office of the Registrar, there is a whole-time Assistant Controller of Examinations to assist the Controller in his office work.

A notable change in the constitution of the University was made in 1921, when, by an Act (Act VII of 1921) amending the law relating to the University, the office of the Chancellor was transferred to the Executive Head of the Government of Bengal, who, from 1906 to 1917, had been the Rector of the University.

In the field of research, for which the Act of 1904 made ampler provision, the institution of the "Premchand Roychand Research Scholarship" with the princely donation of two lakhs of Rupees, received, in 1866, from Mr. Premchand Roychand of Bombay laid the true foundation of such work. Since then, several other endowments have been made from time to time by philanthropists and public bodies with a view to stimulating research work in the different branches of knowledge, among which the following may be specially mentioned :—

The Professorships. Tagore Professorship (in Law), Maharajah of Durbhanga Scholarship (in Medicine); Sir Rashbehary Ghose Professorships and Scholarships (in Arts or Science); Sir Taraknath Palit Professorships and Scholarships (in Science); Khaira Professorships (in Fine Arts and Science); University Research Scholarships (for work under University Professors). Many prizes and medals, too numerous to be mentioned here, have also been endowed by public-spirited individuals.

In 1908, the Jubilee of the University was celebrated and the Jubilee Research Prize was founded on the occasion with a sum of Rs. 30,000/-, set apart from the Reserve Fund of the University, for the promotion of research by its Graduates.

In 1909, the New Regulations making provision for Post-Graduate Teaching by the University came into operation; while in 1917, the

system of centralisation of Post-Graduate studies in Calcutta was introduced in the name of, and under the control of, the University. Accordingly, a Post-Graduate Department has been set up, its government being vested in two Councils for Arts and Science consisting of all Post-Graduate teachers, with a President and an Executive Committee for each body, the Proceedings of the Councils being subject to confirmation by the Senate. Provision has been made, separately for this Department, for the constitution of Boards of Higher Studies in different subjects for recommending Examiners and text-books for Post-Graduate Examinations. Questions of appointments, tenure, pay, terms and conditions of service of the teaching staff are considered by a Body called the Appointments Board, which has been constituted for the purpose, its decision being subject to confirmation by the Senate. For administrative work, there is provision for the appointment of a whole-time Secretary for each Department of Arts and Science.

The Post-Graduate Department has undertaken instruction and examination in the following subjects, as well as the teaching of Pali, Arabic, Persian, Experimental Psychology, Commerce and Anthropology (in the Department of Arts and Zoology), Physiology (in the Department of Science), up to the B.A. and B.Sc. standards respectively :—

The Various Departments. *Arts Department.*—English, Sanskrit, Pali, Comparative Philology, Arabic, Persian, Indian Vernaculars, Philosophy, Experimental Psychology, History, Ancient Indian History, Economics, Commerce, Pure Mathematics and Anthropology.

Science Department.—Applied Mathematics, Physics, Chemistry, Botany, Physiology, Geology, Zoology and Applied Chemistry.

Arrangements have also been made for the teaching of Tibetan, Chinese and Japanese under the auspices of this Department.

Ever since the undertaking of teaching work by the University and the development of education in the country, the number of students reading for various branches of studies has gone up, and the

Department has now about 940 students reading for the M.A. Degree and 250 students reading for the M.Sc. Degree. The number of teachers (including University Professors and holders of endowed Chairs) is 201 and 59, in the Departments of Arts and Science respectively.

The establishment of the University Science College has a great history behind it—in fact, it is the history of human sacrifice at the altar of Learning. In 1912, Sir (then Mr.) Taraknath Palit made over to the University lands, buildings and money to the value of fifteen lakhs of rupees in aid of the foundation of a University College of Science and Technology. Later, on the 8th August, 1913, Sir (then Dr.) Rashbehary Ghose came forward with an offer of ten lakhs of rupees in furtherance of the same object, and, again, on the 22nd December, 1919, he placed at the disposal of the University a further sum of 11 lakhs and forty-three thousands of rupees to be applied exclusively for purposes of technological instruction and research. The money, lands and buildings, thus made available by the princely gifts of those two great men of Bengal, brought into existence the University College of Science. Out of the income derivable from the Palit endowment, two Chairs are maintained, one of which is designated the Palit Professor of Chemistry and the other, the Palit Professor of Physics. The princely gift of Sir Rashbehary Ghose was applied towards the foundation of six chairs for Applied Mathematics, Physics, Chemistry, Botany, Applied Chemistry and Applied Physics, respectively. In 1921, the University was endowed with a fund of Rs. 5,50,000/- from the estate of the late Kumar Guruprasad Singh of Khaira, and out of the annual income of that fund, five University Professorships are maintained. One of these Professorships is named the Bageswari Professorship of Indian Fine Arts, and the other four Chairs are named the Guruprasad Singh Professorships of Indian Linguistics and Phonetics Physics, Chemistry and Agriculture, respectively.

By the last-named Professorship Agricultural education has been given a place in the curriculum of studies of this University.

The control of the above three endowments is vested in three different Bodies styled the Governing Body of the Sir Taraknath Palit

Trusts, Board of Management of the Sir Rashbehary Ghose Endowments, and Board of Management of the Khaira Fund, respectively, subject to confirmation of their Proceedings by the Syndicate or the Senate, as the case may be.

The government of the entire Science College is entrusted to a Body called the Governing Body of the University College of Science, the proceedings of which are subject to confirmation by the Senate.

In addition to the endowed chairs mentioned above, the following Professorships, established for the promotion of research and higher studies are also maintained by the University :—

Tagore Law Professorship (founded in 1868); Minto Professorship of Economics (founded in 1908); George V Professorship of Mental and Moral Science (founded in 1911-12);
The New Pro- Hardinge Professorship of Higher Mathematics
fessorships. (founded in 1911-12); Carmichael Professorship of Ancient Indian History and Culture (founded in 1912); Professorship of Comparative Philosophy (founded in 1913); University Professorship of English (founded in 1914); University Professorship of Botany (founded in 1918); University Professorship of International Law (founded in 1920); and University Professorship of Zoology (founded in 1920).

The Tagore Law Professorship is maintained out of the endowment made by Mr. Prasannakumar Tagore, formerly a Fellow of the University; the George V. Professorship of Mental and Moral Science and the Hardinge Professorship of Higher Mathematics were established in commemoration of the visit of their Imperial Majesties King Emperor George V. and Queen Empress Mary; and the Minto Professorship of Economics was founded on the occasion of the Jubilee of the University. A Government grant of Rs. 37,000 is received for the maintenance of three of these Chairs. The other Chairs are being maintained out of University funds.

To perpetuate the memory of the late Sir Asutosh Mookerjee, the Senate has also lately sanctioned the creation of three other chairs,

namely, the Asutosh Professorships of Sanskrit, Mediaeval Indian History and Islamic Studies, respectively.

The Regulations of the University provide for the appointment of University Readers to deliver lectures, mainly for the benefit of Graduates engaged in research work. A series of public lectures on special subjects are also arranged by the University for the promotion of original investigation and research. These lectures are known as University Extension Lectures.

Among other organisations for the advancement of learning, the Ghose Travelling Fellowships, the Ramtanu Lahiri Research Fellowship and the Sreegopal Basu-Mallik Fellowship have the greatest importance.

The Ghose Travelling Fellowships were founded in 1921 for the purpose of helping scholars to investigate educational methods abroad or to undertake research in any special branch
Fellowships. of learning—the cost being met out of an endowment of two and a half lakhs of rupees made by Sir Rashbehary Ghose.

The Ramtanu Lahiri Research Fellowship was established in 1913 for investigation of the History of the Bengali Language and Literature from ancient times and for the delivery of a course of public lectures on the subject.

The Sreegopal Basu-Mallik Fellowship was originally established for the purpose of giving tutorial assistance to students of Sanskrit generally and of Vedanta Philosophy in particular. The scheme was modified in 1925, and the Fellow is accordingly now required to deliver a course of lectures on Vedanta Philosophy, dealing specially with the place occupied by Vedanta in the philosophical system of the civilized world and with its merits as compared with Western schools of thought.

Like the above Fellowships, there are three important Lectureships, *viz.*, the Stephanos Nirmalendu Ghosh Lectureship, the Kamala Lectureship and the Adharchandra Mukherjee Lectureship, established under the auspices of the University, which aim at the diffusion of higher thought and knowledge among the public.

The Stephanos Nirmalendu Ghosh Lectureship was founded in 1919, and maintained out of the income of an endowment of one lakh of rupees made over to the University by Rai G. C. Ghosh Bahadur, for the institution, in memory of his son, of a course of lectures on Comparative Religion once in every three years.

With a view to establishing the Kamala Lectureship in memory of his eldest daughter, Sir Asutosh Mookerjee placed at the disposal of the University in 1924, Government Securities for Rupees Forty Thousand for the institution of a course of Lectures, either in Bengali or English, on some aspects of Indian Life and Thought from a comparative standpoint. Dr. Annie Besant and the Right Hon'ble Mr. Srinivasa Sastri have already acted as Kamala Lecturers in 1924 and 1925 respectively; and Mrs. Sorojini Naidu, and M. M. Dr. Ganganath Jha have been invited to participate in the work in future.

The Adharchandra Mukherjee Lectureship has been instituted with an endowment of Rs. 9,000 made by Mr. Adharchandra Mukherjee, M.A., B.L., Member of the Senate, for delivery of a course of two Lectures annually by a distinguished Scholar on a selected subject connected with Letters or Science for the promotion of Post-Graduate Teaching.

In addition to these, there are three other Lectureships, established for the promotion of higher studies in Hindi and Oriya. The Hindi Lectureship has been founded out of an endowment of Rs. 15,000 made by Mr. G. D. Birla, and the Oriya Lectureships have their origin in two gifts made by Maharaja Sir Biramitrodaya Singh Deo of Sonapur, one of the last lectureships being established out of his endowment of Rs. 33,000 in memory of Sir Asutosh Mookerjee.

There is also provision for State and Private Scholarships, under the auspices of this University, for study outside India. The State Scholarships, tenable in England, originally founded

The Scholarships. by the Government of India, were provincialised in 1921, when the Bengal Government established two such scholarships of £300 a year each with the usual war bonus for the purpose of general study tenable for three years in the United Kingdom, to be awarded every other year to the best Hindu

and Mahomedan candidates from the Universities of Bengal. The Guruprasanna Ghosh Scholarship and the Sir Taraknath Palit Scholarship are the most important private scholarships, which are maintained out of the income of the endowments made by Mr. Guruprasanna Ghosh and Sir Taraknath Palit. The Guruprasanna Ghosh Scholarship aims at the promotion of real learning amongst young men who must be pure natives of Bengal, preferably Hindus, so that they may become specialists in some subject of Arts or Science, or increase their knowledge of Agriculture and of the Industries of Europe and America, or the East, the object of the Founder being to afford opportunities to the sons of artisans and mechanics, following such industry in India, to specialise in their arts. Three scholarships, of the annual value of Rs. 1,000 each, if tenable in Japan, and Rs. 2,000, if tenable in Europe or America, for three years are maintained out of this endowment. The Sir Taraknath Palit Scholarship has been founded with a sum of Rs. 1,00,000, set apart out of the Trust estate of Sir Taraknath Palit, for maintaining a scholarship for advanced students in Science to carry on research or investigation abroad.

For the purpose of awarding scholarships, prizes and medals on the results of its various examinations, the University maintains 150 endowments, most of which have been made by outsiders and outside bodies.

The question of the establishment of a School of Mining has been engaging the attention of the University for a long time. It is, however, in contemplation by the University to establish it at Ikhra, for which purpose Mr. Prankrishna Chatterjee has made over to the University his School at Ikhra, with buildings and 100 bighas of land, and Rs. 10,000 in cash for the equipment of a laboratory, together with an annual grant of Rs. 1,800.

The importance of Libraries, Laboratories and Museums in the field of research and higher studies cannot be overestimated, and the

<p>Libraries, Laboratories and Museum.</p>	<p>University is not lacking in making due provision for them. There is an Anthropological Museum under the University which provides opportunities for research and study in Anthropology. The departments of Physics, Chemistry, Botany,</p>
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Zoology, Geology, and Physiology in the Science College and Presidency College, now all possess complete laboratories. The University Library which was founded in 1869 with a donation of Rs. 5,000 from Mr. Joykissen Mukherjee of Uttarpara, and which has, through the munificence of the Maharaja of Darbhanga, been ultimately provided with its own location, has lately developed into a great institution. It now contains more than 100,000 volumes, which include works, besides those in English Literature and of the chief authorities on Indian Antiquities, almost complete sets of the Sanskrit, Pali, Arabic, Persian, Latin, French and German Classics, fairly good collections in Mathematics, Philosophy, Religion, History (including Biography, Geography and Travels), Philology and Anthropology, and an up-to-date collection of books (including Reports, Blue Books, etc.) in Economics, Politics and Sociology. It has also acquired most valuable sets of manuscripts in Bengali and Tibetan. Two separate sections of this library were founded with a large number of books bequeathed to the University by Dr. Pischel, a great Oriental scholar, and Mrs. Dunn, in memory of her husband, Dr. Dunn.

With some exceptions in England and the United States, there are few Universities in the world which can boast of a longer and more varied list of publications than the University

The Press. of Calcutta. The development of the Press Department has given the University ample scope for taking up the work in connection with important publications in the different branches of knowledge. Among its own serial publications may be mentioned the Journal of the Department of Arts, the Journal of the Department of Science, and the Calcutta Review, which are of great public interest. Several other periodical publications, such as the Chemical Journal, Mathematical Bulletin, Journal of Physics, Journal of Psychology, etc., are also printed at the University Press; they mainly embody results of research by the teachers and students of the Post-Graduate Department. The University has, up to date, brought out 272 publications, exclusive of text books in various languages.

Like the Post-Graduate students, the University also affords facilities for legal studies on a sound basis. The University Law College

was established for this purpose in July, 1909. It serves as a model College for the promotion of legal education of students for degrees in Law (both B.L. and M.L.). The management of the College is vested in a Governing Body, the Proceedings of which are subject to confirmation by the Syndicate. It has a whole-time Principal, a part-time Vice-Principal, and part-time Professors numbering 56. Besides the ordinary courses, it trains up students in Moot Courts. The present number of students on the rolls of the College is 2,300. The College has good Library of 38,432 volumes. The Hardinge Hostel, which provides accommodation for 150 students, is attached to this College and is reserved for the use of Hindus.

The problem of the residence of students is admittedly one of great importance. The Hardinge Hostel partly removes the difficulty of Law students in this respect. There are three other messes attached to the Law College for the use of its students. For the accommodation of Post-Graduate students there are three messes licensed by the University. For the use of undergraduate students there are five undergraduate hostels attached to five private Colleges of Calcutta, and a Mahomedan Hostel for Inter-Collegiate students, all six of which have been made over to the University by Government, after meeting the expenses of their construction. There are also 19 non-Collegiate Hostel (including 3 Hostels for students of the Depressed Classes). All these Hostels are under the direct supervision of the University. For the purpose of administering proper control over the residence of students of all descriptions a Committee of the Senate called the "Students' Residence Committee" is annually appointed, and its proceedings are laid before the Syndicate for confirmation.

The problem of residence and the problem of health of students go hand in hand. In order to consider the question of health of student their physical education and the organisation of games and other forms of recreation, a Committee called the Students' Welfare Committee was appointed in 1925.

The introduction of compulsory Physical Education in Schools and Colleges is also engaging the attention of the University, and a scheme

has been formulated for the purpose, which is under the consideration of Government.

Besides caring for the interests of its internal students, the University is also mindful of the interests of its external students, and with that end in view it has established a Bureau, at the instance of the Government under the name of the Students' Information Bureau, which is constituted mainly of representatives of the University and is managed by it—the Provincial Advisory Committee of former times having now disappeared. The function of the Bureau is to supply information, advice, and assistance to students wishing to pursue their education abroad, as also supply foreign Universities with information regarding students which will enable them to make proper selection from among those applying for admission.

The resources of the University being very limited, financial assistance from Government is sought from time to time to meet necessary expenses of the various departments of the University. The grant under different heads with which Government helped the University in 1926-27 amounted to Rs. 7,11,128, against a total expenditure of Rs. 26,65,444 which the University had to bear.

In 1917, the Government of India appointed a Commission, with Sir Mihcael Sadler as its Chairman, for the examination of the present system of education, specially in reference to Calcutta University. The Commission recommended certain far-reaching and fundamental changes. Two main recommendations of the Commisison are the establishment of a Board of Secondary Education, and increased use of the elective principle in the constitution of the University.

“The recommendations of the Calcutta University Commission have to a great extent determined the lines on which were established in 1920 and the two following years the unitary teaching and residential Universities of Aligarh, Dacca, Delhi, Lucknow, Rangoon, and on which the University of Allahabad and Madras were reorganised in 1921 and 1923 respectively.”

Since 1928 a more permanent arrangement about financial matters has been arrived at with the Government and the tenure of

service of the members of the teaching departments of the Post-graduate studies has been stabilised.

The University College of Science and Technology at 92, Upper Circular Road, Calcutta, owes its origin to the munificence of the late Sir Taraknath Palit, who on the 15th of June and the 8th of October, 1912, executed two trust deeds in favour of the University of Calcutta whereby he made over to the University land and money of the aggregate value of Rs. 19 lakhs. The Founder stated that as his object was the promotion and diffusion of Scientific and Technical education and the cultivation and advancement of pure and applied science, amongst his countrymen through indigenous agencies, the two chairs which were to be founded by the University in this connection were to be filled by Indians. The management of the Trust was vested in a Governing Body consisting of the Vice-Chancellor of the Calcutta University, the Director of Public Instruction, Bengal, the Deans of the Faculties of Science and Engineering, four Members of the Senate, the two Professors and four nominees of the Donor.

The University accepted the trust and undertook to provide from its own funds a sum of Rs. 2½ lakhs for providing suitable laboratories, workshops and other facilities for teaching and research. The two Trust of Sir Taraknath Palit were followed by a gift of Rs. 10 lakhs by Sir Rash Behary Ghose on the 8th of August, 1913. The Founder directed the establishment of four chairs for Chemistry, Physics, applied Mathematics and Botany with special reference to agriculture. The management of the Trust was also on lines similar to those of the Palit Trusts. In December, 1919, Sir Rash Behary Ghose followed up his gift by another of Rs. 12½ lakhs for Technological Studies, and two chairs, one for applied Chemistry and the other for applied Physics were founded in this connection. Two more chairs were added to the professoriate of the University by the munificence of Kumar Guru Prasad Sinha of Khaira who contributed 5 lakhs of rupees, the conditions with regard to which were accepted by the Senate by two resolutions, dated the 3rd of January, 1920 and 3rd June, 1921.

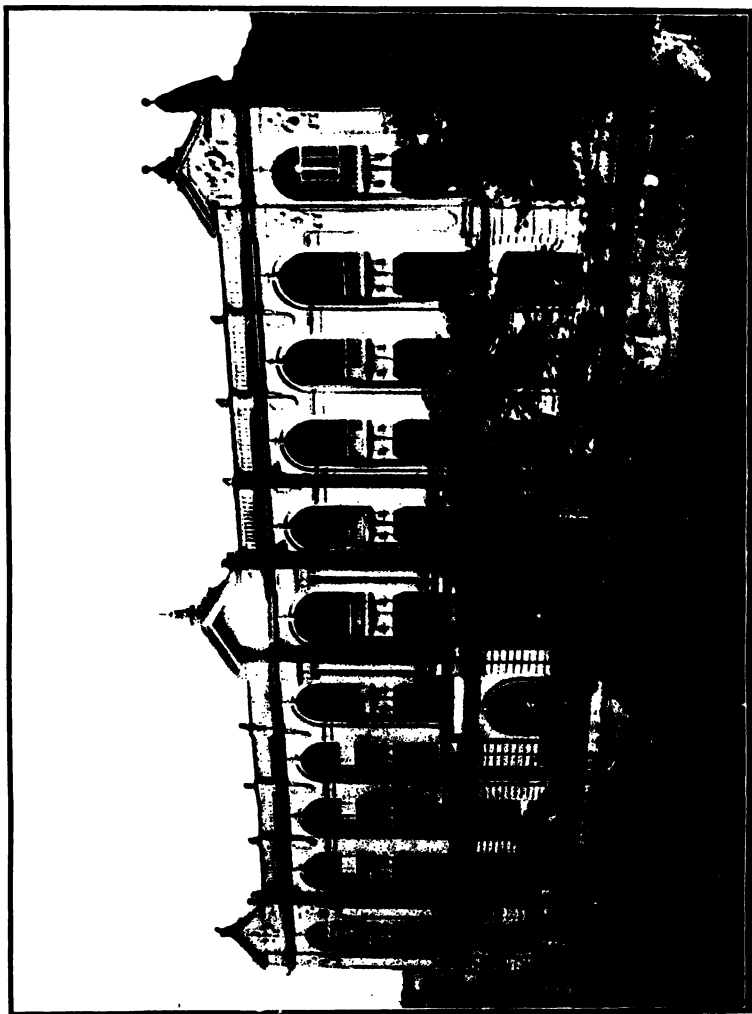
Sir P. C. Ray, Palit Professor of Chemistry has been rendering gratuitous service to the University since September, 1922, and his salary from that date is being funded after his desire for the furtherance of the Department of Chemistry (both General and Applied). The Senate on the 24th August, 1929, adopted the following scheme for the utilisation of the fund created out of the accumulated salary of the professor :

- (1) Rs. 5,000 for extension of the Inorganic Chemistry Laboratory of the University College of Science.
- (2) Rs. 10,000 for equipment of the Inorganic Research Laboratory for the investigation of Rare Earths and for Micro-crystals.
- (3) Rs. 10,000 to be paid to the Indian Chemical Society as contribution to its building fund.

The rest was to be funded and out of the interest two Research Fellowships of the value of Rs. 200 p.m. to be created.

The Foundation Stone was laid by the late Sir Asutosh Mookerjee on the 27th March, 1914, and Post-Graduate classes were started in June, 1916, in the Departments of Physics, Chemistry (including Bio-Chemistry), applied Mathematics and Experimental Psychology. Applied Chemistry and applied Physics were formulated as alternative courses in Chemistry and Physics in 1920 and in 1924, and were formed into separate departments in 1932 with their independent Boards of Studies.

A short description of the courses of study in the different departments may not be out of place here. All the courses are Post-Graduate ones for two years. In each subject students who have got their graduation degree with Honours in the subject may offer a piece of research work in lieu of examination in certain papers. Average lecture work per day is less than two hours, students passing rest of their time in the laboratories. In some of the subjects candidates for the M.Sc. Degree are required to appear, besides the usual com-



UNIVERSITY COLLEGE OF SCIENCE,

UPPER CIRCULAR ROAD.

pulsory papers, at a special paper for which a large choice of subjects is offered.

In Physics, a special paper may be offered in (1) Theory of Optical Instruments, (2) Spectroscopy, (3) Dispersion and Scattering of Light, (4) Advanced acoustics (5) Advanced Thermodynamics and Kinetic Theory of matter, (6) Electrical Oscillations and Wireless, (7) X-rays and Crystal Structure, (8) Relativity. In applied Chemistry there is provision for special courses in (1) Fermentation, (2) Oil and fat technology and (3) Ceramics, and in Applied Mathematics for (1) Theory of Elasticity, (2) Tides and Surface waves, (3) Advanced Dynamics, (4) Spherical Astronomy and theories of Cosmogony, (5) Celestial mechanics including lunar and planetary theories, (6) Geodesy and Elements of Geophysics and (7) Electricity and Magnetism.

The Syllabus for the Course of studies in applied physics has been thoroughly recast and provides among other things for training in power engineering, railway block signalling, communication engineering and standardisation of different electrical instruments required for precision and commercial purposes. There is also a separate section for repairs of different types of electrical instruments, which also undertake work from outside. Instruction in mechanical engineering is given at the B. E. College, Sibpore, for which purpose their co-operation has been secured. The technical laboratory is handsomely equipped and possesses a large assortment of motors and motorgenerators of various types and designs, transformers for high voltages upto 60 K.V. and currents upto 2500 Amps. with necessary measuring instruments. There are standardisation apparatus for resistance, current and voltage of all ranges and for watt meters and supply meters, a variety of oscillographs, a 15 line automatic telephone exchange, an one unit panel of railway block signalling apparatus and instruments for studying the characteristics of telegraph and telephone lines.

The course in Applied Chemistry covers such subjects as fuels, furnaces, pyrometry, analytical chemistry, applied physical chemistry, mechanical drawing, internal combustion engines, chemical plants, etc. Training in both the applied departments are supplemented by excursions to various factories laboratories and workshops throughout

India. All the departments are provided with well equipped workshops.

The department of Botany and Zoology are located in one of the houses of the late Sir Taraknath Palit at 35 Ballygunge Circular Road.

The Botany and Zoology Departments. There are arrangements for teaching the Post-Graduate courses in Botany and for research work.

The Botany laboratory is well-equipped, including apparatus for various types of work including Physiology, Bacteriology, Mycology and Cytology and a small dark room for photography. There is a good herbarium containing specimens from various parts of India and abroad which are being added to. There is a small experimental garden, where experimental work on the physiology of economic plants is being carried out. Instruments for the measurement of the different climatological factors are available.

The Department of Zoology is housed, together with the Botany Department, in a commodious building with an adjoining 'jhil' and a large compound. It teaches the Post-Graduate course in Zoology and also undertakes to teach B.A. and B.Sc. Pass and Honours course in Zoology. The laboratory is well-equipped, contains a small teaching museum and a reference library, and provides a special arrangement for microphotography. Students both in the Post-Graduate course as well as after their Master's degree examination work as research scholars. A research stipend is attached to the department. A trained artist and a taxidermist are also attached to the Department.

UNIVERSITY OF DACCA

Dacca, the former Mogul Capital of Bengal, and, more recently, until 1912, Capital of the short lived Province of Eastern Bengal and Assam, is situated in Eastern Bengal about 200 miles N.E. of Calcutta. The University of Dacca was established in 1921 under an Act, passed in 1920, which provides for the constitution of Faculties of Arts, Science, Law, Agriculture and Medicine. It is constituted in its main lines in accordance with the recommendations of a Committee, which

sat in 1912 and was presided over by the late Sir Robert Nathan, and of the Calcutta University Commission of 1917-1919, presided over by Sir Michael Sadler. The Report of this Commission states that "two main factors may be clearly distinguished in the origination of the scheme; first and foremost, the desire of the Musalmans of Eastern Bengal to stimulate the educational progress of their community and secondly, the desire of the Government of India to create a new type of residential and teaching University in India, as opposed to the present affiliating type. To these must be added a third factor of special importance, the desire of the Government to relieve the congestion of the University of Calcutta." Although special attention is being devoted to Islamic Studies and to the needs of the Musalman Community, the University remains open to all, without distinction of sex, race, creed or class. It is a unitary Teaching and Residential University of which the constitution resembles in many respects that of the modern English Universities. The authorities of the University include a Court, an Executive Council, an Academic Council, and Faculties; and the teaching staff has the main responsibility for all matters connected with teaching and examinations. The students (other than those living under specially approved conditions) reside in the Halls and Hostels situated in the University domain, and the University teachers also reside in the houses created for them thereon. The domain consists of about a square mile of fine park land, including over 100 acres of playing fields. It is adjacent to the Civil Station of Dacca and to the park called the Ramna, and lies from 1 to 1½ miles north-west from the centre of Dacca City. It is provided with electric light and power.

The chief existing buildings for teaching and administrative purposes include: Central Buildings, containing about 200 rooms, with 117,000 sq. feet of floor space, used for class rooms and Library (at present utilised partly as a hostel for Muslim students); Chemical and Physical Laboratories, each including about 1200 sq. feet of floor space; a further building used as an extension of the Chemistry Laboratory, and Club House for members of the University staff; the Curzon Hall (which accommodates about 2000 persons); the Dacca Hall buildings, with residential accommodation for 160 students; and the Jagannath Hall buildings. A residence for Women students has

been opened during the session 1926-27, and is attached to the Dacca Hall.

The Library has about 46,000 volumes. The Laboratories include: Physical, with metal and wood workshops; Chemical, with special arrangements for training in commercial analytic methods; and Psychological.

There are three *Faculties*: Arts, Science and Law.

VISVA-BHARATI AND SANTINIKETAN

A hundred miles away from Calcutta to the North-West is situated Santiniketan, the headquarters of the Visva-Bharati, Dr. Rabindranath Tagore's International University. The Visva-Bharati was formally founded on the 22nd December, 1921. It had, however, grown gradually out of the Santiniketan Asram which is associated with the name of the Poet's father, Maharshi Devendranath Tagore, one of the outstanding spiritual personalities of his time.

The site of the Santiniketan Asram was originally a bare spot, in the middle of open undulating country. Here Maharshi Devendranath came on one of his journeys, and attracted by the place, pitched his tent, and spent his time in meditation and prayer. The Saptaparni trees on that spot are still to be seen, with the open plains stretching out before them to the western horizon, and the marble slab which marks the place is inscribed in Bengali with the text of the Maharshi's meditation—

“He is the repose of my life,
The joy of my heart,
The peace of my spirit.”

The Maharshi built a house and a temple in this place and dedicated this Asram with an endowment to the public for the use of everyone who wished to meditate on God, free from all antagonism of creed and sect. Thirty years later, Rabindranath Tagore, with the warm approval of his father, founded a boarding school, the Brahma-Vidyalyaya, at this place (December, 1901). His immediate object was to build up an institution where children would live a

happy and free life and be educated in close touch and harmony with the surroundings of nature. The forest homes of ancient Indian learning had always a special appeal to his mind.

The idea of the Visva-Bharati, a wider cultural centre, was a natural development of the Asram. It took definite shape in 1921, and the Visva-Bharati was registered as a public body in May, 1922, whereupon Rabindranath Tagore made over to it all the funds and properties in use for the institution. The declared object of the Visva-Bharati is to seek to realise in a common fellowship of study the meeting of East and West, and thus, ultimately, to strengthen the fundamental conditions of world peace. To further this object, the Visva-Bharati maintains educational institutions at Santiniketan, and the Institute of Rural Reconstruction at Sriniketan (two miles off from the Asram) with various departments for the practical and vocational training of students.

The residential arrangements for pupils at Santiniketan are under the direct supervision of the teaching staff. The pupils live in small groups with a Housemaster, who is not merely an instructor but also their companion. Girls are accommodated in the Naribhavan—a separate building for them—under the supervision of an experienced Lady Superintendent, and playing grounds have been provided for their exclusive use. Girl students are also given practical training in cooking, needlework, nursing and domestic economy. A whole time qualified doctor is in charge of the Hospital and looks after the health of the students. The pupils get every facility for sports and games.

Education is carried on amidst the peace and beauty of Nature. Classes are held in the open air whenever possible. A special feature is the personal contact between teachers and students. The staff includes many teachers of great experience and high academic distinction. The Library at Santiniketan deserves special mention for its many valuable collections of works—including generous gifts from Germany, France, Italy, Egypt and different Indian States. There is a good collection of manuscripts, and the Art section is unique in India.

The lowest forms in the school have been organised into the

Sishuvibhaga, or the Children's Department, to give free scope to scientific methods of education based on a fuller understanding of child-psychology. 'Learning by doing' may briefly express the method that is attempted. A careful study of the instincts and interests of the children, by competent trained teachers, serves as the starting point of their instruction.

The higher forms and the College classes have been combined into the Sikshavibhaga. By special arrangement with the University of Calcutta students are coached and prepared for the examinations of that University. Those who do not go up for the Calcutta University examinations may study for the Visva-Bharati Diploma.

The Vidyabhavan is the Institute of Research, maintained for advanced students who desire to work in an atmosphere of quiet and learning. Besides a strong group of resident Professors, an eminent scholar comes every year from abroad as Visiting Professor. Drs. Sylvain Levi, Winternitz, Sten Konow and Formichi have stayed at Santiniketan in this capacity.

The Kalabhavan, or the School of Arts and Crafts, is a great feature of Santiniketan. A School of Indian painting is developing here under the direction of eminent artists, and students flock to it from every part of India. Education in Music is not neglected, and attention is given to the instruction of students in instrumental music as well as singing.

Sriniketan is the centre of the Institute of Rural Reconstruction, which is now attracting much attention in this country. There are various departments at this centre, doing a great deal of useful work. The Agricultural Station undertakes various experiments for the benefit of the cultivators around, and apprentices are taken from different districts. The Bengal Government Agricultural Department has undertaken the management of the mulberry plantation and the rearing of silkworms. The Poultry and Dairy departments are developing rapidly. The Tannery trains the local leather workers in the art of improved tanning, and for starting business on the co-operative basis. The Weaving department has trained 138 students in four years—many of them being teachers in the schools of the

district. Teachers trained here have started weaving in 25 different centres.

Village work is a very important part of the activities of the Institute. Public Health propaganda is carried on by systematic lantern lectures. Volunteers attend to sanitation work in the neighbouring fairs. Health societies have been organised to fight malaria, and their work is regularly supervised. A Dispensary with an attached clinical laboratory has been opened. Prospective village workers are periodically gathered in Training Camps and are taught first aid, processes of disinfection, and preventive work. Brati-Balaka organisations, or Boy Scout Troops, have been started among the village boys. The Institute has established a Girls' School, a Circulating Library and many Night Schools for the depressed classes. Among its most recent activities may be mentioned the publication of a complete economic and social Survey of the Village of Ballavpur, and similar work has been begun in other villages. Finally, the Sikshasatra is an interesting educational experiment. It is a school in which pupils are taught to do their own work while receiving as far as practicable the elements of an all-round education.

APPENDIXES

I

THE NUMBER OF PRIMARY SCHOOLS.

1932-33					191-32	
	Number of Schools managed by Government.	Number of Schools managed by District Boards & Municipalities.	Number of Schools receiving aid from public funds.	Number of Schools not receiving aid from public funds.	Total	
Bengal excluding Calcutta	82	4,097	35,191	4,780	44,150	43241
Calcutta	—	147	328	8	483	477
	82	4,244	35,519	4,788	44,633	43,718

II

EDUCATIONAL INSTITUTIONS AND SCHOLARS IN BENGAL FOR THE YEAR 1932-33.

		Institutions		Scholars	
		(1933) — (1932)		(1933) — (1932)	
I. RECOGNISED INSTITUTIONS.					
A. FOR MALES.					
Universities	—	2 ...	2 ...	1,857 ...	1,880
Colleges	—	45 ...	45 ...	20,359 ...	19,378
Professional Colleges	—	14 ...	14 ...	5,040 ...	5,165
High Schools	—	1,122 ...	1,096 ...	269,309 ...	261,938
Middle Schools	—	1,864 ...	1,899 ...	161,699 ...	165,484
Primary Schools	—	44,643 ...	43,724 ...	1,725,385 ...	1,682,503
Special Schools	—	2,819 ...	3,005 ...	119,103 ...	123,358
		<u>50,509</u>	<u>49,785</u>	<u>2,302,752</u>	<u>2,259,733</u>
B. FOR FEMALES.					
Colleges	—	6 ...	4 ...	508 ...	366
Professional Colleges	—	3 ...	3 ...	53 ...	43
High Schools	—	64 ...	61 ...	16,285 ...	15,644
Middle Schools	—	71 ...	70 ...	8,882 ...	8,606
Primary Schools	—	18,076 ...	17,438 ...	466,745 ...	433,775
Special Schools	—	44 ...	45 ...	2,162 ...	1,894
		<u>18,264</u>	<u>17,621</u>	<u>494,635</u>	<u>460,328</u>
II. UNRECOGNISED INSTITUTIONS.					
A. FOR MALES	—	1,243 ...	1,312 ...	54,327 ...	52,861
B. FOR FEMALES	—	311 ...	318 ...	11,377 ...	10,303
		<u>1,554</u>	<u>1,630</u>	<u>65,704</u>	<u>63,164</u>
Grand Total	—	70,327	69,036	2,863,091	2,783,225

In the previous tables the Colleges include Arts and Science Colleges, the Law Colleges, the Colleges of Education, Engineering, Medicine, Agriculture, Commerce, Forestry, Veterinary Science and also Intermediate and second grade colleges.

The Unrecognised Institutions include :

1. Some *maktabs*, 35 for boys and 16 for girls in which 827 boys and 350 girls were receiving education.
2. Mulla and Koran Schools, 220 for boys and 69 for girls,—the number of students being 4,921 boys and 2,353 girls.
3. Pathsalas—25 for boys and 49 for girls—the number of students being 840 boys and 1,042 girls.
4. Kyaung schools—73 for the boys, the number of students being 1,599.

The Special Schools which are recognised by the Government include :

1. *Maktabs*—355 in all in which 8,871 boys and 7 girls were receiving instruction.
2. *Tols*—329 for boys and 1 for girls—the number of students being 6,612 boys and 66 girls.

The Primary Schools, recognised by the Government include :

1. *Maktabs*—16,324 for boys and 9,675 for girls—the number of students being 598,821 boys and 258,680 girls.
2. *Tols*—422, the number of students being 5,159.

CHAPTER VI

PROFESSIONAL AND TECHNICAL EDUCATION

1. MEDICAL EDUCATION.

Before the introduction of the western system of medical education the indigenous systems both Hindu and Islamic were prevalent in the country. The state of this indigenous medical practice, according to the report of Adam was "so intimately connected with the welfare of the people that it could not be wholly overlooked".

**Indigenous
system.**

Even in modern times the two indigenous systems the *Ayurveda* and the *Yunani* are not at all disregarded. On the other hand serious attempts have been made in recent years to recognise them.

The western system of medical education was introduced in Bengal towards the beginning of the 19th century. According to the details collected by Rev. J. Long "previous to 1807, from fifty to one hundred native doctors used to attend the hospital to study the practice there and introduce it among their countrymen".

**Medical educa-
tion before 1828.**

There was a Vernacular Medical School with 30 students under Dr. Jameson. A knowledge of Hindustani was compulsory. The School received a fees of eight Rupees monthly and the course was for three years. Instruction used to be given in Hindustani on Anatomy, Materia Medica and Clinical subjects. The successful students were employed in Civil and military departments. Dr. Breton, another professor, published various Urdu works on Medical subjects.

In 1828 Dr. Tytler was appointed lecturer in the Sanskrit College, with a Pundit assistant. The students handled bones of the human skeleton without reluctance and in some cases they performed the dissection of the softer parts of animals. It was soon proposed that a hospital should be attached to the College. The Calcutta Medical College was founded in 1835.

**Medical
education in
the Sanskrit
College.**

In 1842-43 Dr. Mouat, the Secretary of the Council of Education, circulated a minute stating that, on the ground of the expense of supplying Sub-Assistant surgeons to the millions of Bengal it was necessary to have a class trained through the Bengali language, men who would be the only checks on the common vendors of poison : to consist of one hundred persons on scholarships of five Rupees monthly, trained by two professors selected from the passed students : when their studies were completed to be located at their own choice at thannas. The Council of Education cordially agreed with the plan. Ram Kamal Sen, noted for his Oriental Scholarship, proposed in 1844, Rupees 1,000 as a prize for the best translation into Bengali of a treatise on Anatomy, Materia Medica and the treatment of the principal diseases prevalent in India. In his proposal he stated that instruction must be given through the Vernacular, the natives studying through an English medium "have neither time nor disposition nor means to communicate to their countrymen the knowledge they possess."

Medical education through Vernacular medium.

In 1852 the Government sanctioned the establishment of a Bengali Class for the "Native Doctors at the Medical College" because the demand for these Doctors had considerably increased. This class of Doctors was a great blessing in the villages of Bengal as they afforded medical aid to numbers for low fees.

In the last report of the Bengali Class of the Medical College the Principal, Dr. Chevers stated :

"160 students remained over from the previous year, 97 were admitted into the Licentiate class and 47 into the Apothecary class, giving a grand total of 304 students at the commencement of the session against 242 at the beginning of the previous session. This shows an increase of 62, and may be regarded as an index of the popularity of this class among our students and the native community".

The advanced medical training is at present provided by three Insti-

tutions namely the Calcutta Medical College, the Carmichael Medical College and the School of Tropical Medicine. There is also the All-India Institute of Hygiene and Public Health. The number of students for the advanced medical courses was 1,331 (including 17 women) in 1933. In the same year in the Final Examination 178 students passed out of 515 candidates. Practical Hygiene work is being done in the All-India Institute of Hygiene and Public Health.

**The present
state of
medical
education.**

As to the number of Medical Schools in the Province recognised by the Government there are 9. About 2,387 (including 30 women) students were receiving medical education in these schools in 1933. In the final examination in the same year 959 students appeared and out of them 496 were declared to have passed.

The Medical College was first started in 1835 in the premises then known as the Petty Court Jail which was situated at the back of Hare School and close to the present Police Morgue. The vernacular class started at the Sanskrit College as early as 1822 succeeded in creating a demand for a well-equipped college.

**The Medical
College,
Calcutta.**

When the Medical College was started the first Hindu who performed dissection on human body was Pandit Madhusudan Gupta who was formerly a lecturer of the Medical Institution at the Sanskrit College and subsequently became Superintendent and Lecturer of the Vernacular Class. Babu Rajkrishna Dey was the first student to dissect human body. Since then the prejudice against dissecting the human body by Hindu students disappeared quickly.

At the suggestion of Mr. James Ronald Martin the then surgeon of the Native Hospital in Calcutta a Fever Hospital and Municipal Committee were established by the Government. The Committee raised funds and emphasised that a central fever hospital was necessary for Calcutta. The fund was augmented through various other contributions.

Babu Moti Lal Seal gave a piece of land and the foundation of the Medical Hospital was soon laid there on the 30th September, 1848.

This is the oldest Hospital in the Medical College and accomodates 320 cases. Since then through public contributions various other hospitals and buildings have been added and the College now is in a position to accomodate 698 beds, and 700 students. It treats about 1200 out-patients daily.

The Medical College at present admits two kinds of students : the Regular class consisting of those who enter the full University Course and the Military Class. The admission to the Military class is restricted to students of European or Anglo-Indian parentage. The course is for six years. The curriculum is as follows :

1st year : Physics, Chemistry, Botany, Zoology and practical classes in all these subjects.

2nd year : Anatomy, Physiology, Materia Medica, Practical Pharmacy, and Dissections.

3rd year : Anatomy, Physiology, Materia Medica, Organic Chemistry, Dissections and Practical classes in Physiology and Organic Chemistry.

4th year : Medicine, Surgery, Midwifery, Pathology, Medical Jurisprudence, Hygiene, Dental Surgery, Hospital Practice, Clinical Methods and demonstrations.

5th year : Medicine, Surgery, Midwifery, Hygiene, Ophthalmic Surgery, Operative Surgery, Mental Disease, Practical Pathology, and Bacteriology, Practical Midwifery, Demonstrations and Hospital Practice.

6th year : Medicine, Special Classes, and Hospital Practice.

The Carmichael Medical College, the first non-official recognised Medical College in India, came into existence in 1916, and affiliation to the University of Calcutta in the Preliminary Scientific M.B. standard was obtained in April of the same year. The Institution that developed into this College was, until the time of affiliation, known as the Calcutta Medical School and the College of Physicians and

**Carmichael
Medical
College.**

Surgeons of Bengal. It has its origin in the year 1886 when some independent medical practitioners met and decided that as there was a great demand for medical education and as the Government Medical schools were unable either to cope with it or to supply a sufficient number of trained medical men for the people, a private medical school should be started to supplement the efforts of the Government. The school under the name of the Calcutta School of Medicine, continued in rented houses for seventeen years. The bulk of the present site was bought in 1890 and the school was removed to Belgachia in 1903. The curriculum was modified in 1887 to that of the Government medical school. The name was also changed to "the Calcutta Medical School." For clinical instruction the students used to attend the Mayo Hospital from the year 1888. The Albert Victor Hospital (a one-storied building) was formally opened with 40 beds in 1902. The upper storey was built and the new wards were opened in 1909, the total number of beds being thus increased to 100. The institution flourished, numerous students sought admission every year, and many trained men of the Hospital Assistant standard were passed out. The College of Physicians and Surgeons of Bengal, another private institution started in 1895, and aiming at medical education to the collegiate standard, was amalgamated with it in 1903. From July 1904 there was therefore the School with a four years' course and the College with a five years' course at Belgachia. The combined institution was now called the Calcutta Medical School and College of Physicians and Surgeons of Bengal and continued to do useful work till 1916. During these thirty years the object with which the institution was started was always kept in view and hundreds of trained medical men passed out who are doing useful work under the Government, Municipalities, in the various industries, *viz.*, Jute, Tea, Shipping, etc., or as country-practitioners. This was rendered possible, mainly by the voluntary, ungrudging, and unpaid work done both in the School and in the Hospital by the independent medical profession.

In 1911, before the introduction of the Medical Registration Bill the Government asked the private medical institutions in Calcutta to unite and form one good and efficient teaching institution with a view to help its recognition by the University or the Bengal Council of

Medical Registration. Attempts at the union continued for nearly two years but failed. The Government of India then decided to render financial help to the parent institution at Belgachia with a view to its ultimate affiliation to the University of Calcutta. Negotiations were opened between the Government and the representatives of the institution in May, 1913. Ultimately, by the good offices of Colonel Edwards, who came to officiate for Colonel Harris as Inspector-General of Civil Hospitals, Bengal, a scheme was framed, the details of which were embodied in a letter dated 12th October, 1913 from the President of the Belgachia Medical Institution to Colonel Edwards and were published later in the *Calcutta Gazette* of 20th April, 1915, soon after the scheme had been sanctioned by the Secretary of State. The main conditions were that the Government offered to give a capital grant of Rs. 5 lakhs provided the Committee raised 2½ lakhs from the public and a recurring grant of Rs. 50,000 provided they got Rs. 30,000 a year from the Calcutta Corporation and Rs. 10,000 annually from the University. The authorities had great difficulties in fulfilling the conditions of the Secretary of State and in obtaining affiliation to the University. However, at last these difficulties were overcome and, as has been mentioned above, the first affiliation to the University of Calcutta was obtained in April, 1916. For this consummation the authorities are greatly indebted to the Right Hon'ble Lord Carmichael, the late Sir Pardey Lukis, Director General, Indian Medical Service, and the Hon'ble Sir Sankaran Nair, Education Member of the Viceroy's Executive Council.

The College was formally opened on the 5th of July, 1916 by His Excellency Lord Carmichael, Governor of Bengal.

The Calcutta School of Tropical Medicine owes its existence to the arduous labours of Sir Leonard Rogers, I.M.S., who in 1910 proposed its inception as a suitable memorial to the late King Edward VII, and commenced to raise funds for the scheme. The earlier proposals were for a small institution with three professors, attached to the Calcutta Medical College,—the “ minor scheme ”. Later as the Endowment Fund grew, the present scheme the “ major scheme ” was adopted and finally sanctioned by the

**The Calcutta
School of
Tropical
Medicine.**

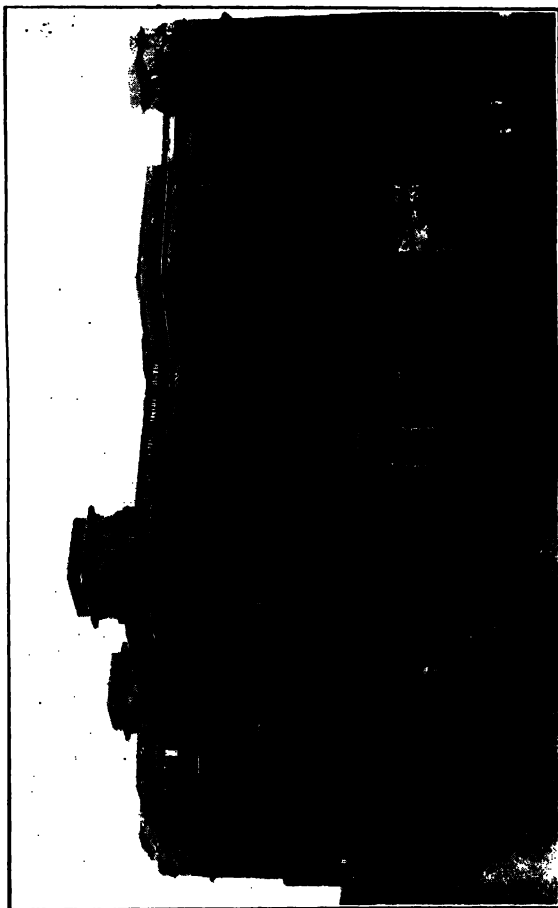
Secretary of State for India in 1920. The capital cost of the scheme was as follows :—

Government of India	...	Rs. 5,00,000 or 32 per cent.
Indian Research and Fund Association	...	„ 2,00,000 or 13 per cent.
Government of Bengal	...	„ 4,82,833 or 31 per cent.
Endowment Fund	...	„ 3,84,000 or 24 per cent.
Total		Rs. 15,66,853

The attached Carmichael Hospital for Tropical Diseases was built, equipped and endowed by public subscription at a capital cost of 3½ lakhs. The School commenced work in 1921, but its official opening ceremony was not held until the 4th February 1922, when the School was officially opened by Lord Ronaldshay, then Governor of Bengal.

The annual income of the School is obtained from the Government of Bengal, the Indian Research Fund Association, and the Endowment Fund of the School. The School has always received the most generous support of the great industries, especially of the Indian Tea, Jute Mills, and Mining Associations.

The School exists for the dual purposes of post-graduate teaching in tropical medicine and research work in tropical diseases. Three classes are held annually; one from October to April, terminating in the examination for the D.T.M. (Bengal); one from July to October, terminating in the examination for the L.T.M. (Bengal); and one in conjunction with the new all-India Institute of Hygiene lasting nine months for the D.P.H. (Calcutta). The classes are extremely popular, and all classes of medical men from sub-assistant surgeons, private practitioners, medical missionaries assistant surgeons, both military and civilian, to I.M.S. officers have been trained. Students have come year by year from all over India, and from many countries overseas such as Ceylon, Burma, America, China, Siam, Australia, New Guinea, Egypt and Kenya. It is hoped that the introduction of this post-graduate training will appreciably raise the status of medical



THE TROPICAL SCHOOL OF MEDICINE

practice throughout India. The professorial staff is a very strong one with nine professors and their assistants, whilst the research workers under the Indian Research Fund Association also give special teaching in their own subjects.

In the field of medical research the School has now an established international reputation. In kala-azar the work at the School has been outstanding. The discovery of the transmission of this disease by the sandfly *Phlebotomus argentipes* was made at the School; methods of diagnosis have been vastly improved and serological tests introduced; whilst in place of the tedious and often unsuccessful tartar emetic treatment of 1920, lasting three months, some 95 to 98 per cent. of patients can now be cured by eight injections of pentavalent antimony salts on eight consecutive days.

**Research in the
School of
Tropical
Medicine.**

In malaria a great deal of valuable field work has been done by Dr. C. Strickland in the Doars and Assam, chiefly under the aegis of the India Tea Association; whilst new methods of treatment have been closely studied, studies made of untreated malaria, and of the natural malaria of monkeys. The dysenteries of India have been exhaustively studied, including such new methods of treatment as the use of carbasone in amoebic infections, and much work done on sprue. The study of cholera and of bacteriophage has been continuous; the value of the later in prophylaxis and treatment is now under investigation.

Intestinal helminths have been the subject of study since the School opened, and a complete hookworm survey of India and Burma has been carried out. The work of Colonel Acton and Dr. Sundar Rao on filariasis has revolutionised our knowledge of this disease and has shown how one and the same parasite—*Wuchereria bancrofti*—causes different lesions in different parts of India, owing to the differing degrees of intensity of infection depending on climatic factors. A filariasis survey of India has been completed and the study of guinea-worm disease has now been undertaken. In connection with leprosy Dr. Muir's department is now the headquarters of an all-India cam-

paign of survey, treatment and propaganda and publishes a quarterly journal—*Leprosy in India*.

Epidemic dropsy has been closely investigated by Col. Acton and Col. Chopra during the past 14 years. These workers have shown that this disease is due to infection of rice stored in damp godowns with a spore-bearing bacillus; this causes decomposition of the rice and the production of toxins; when the diseased rice is eaten the toxins are absorbed and affect the heart and the circulation, thus giving rise to the disease. The diabetes research department under Dr. J. P. Bose has studied the causation of this disease in Bengal, and especially the pre-diabetic state and diabetes in children.

Colonel Chopra since 1924 has carried out an exhaustive investigation into the indigenous drugs of India; the purposes of this enquiry are threefold; to ascertain whether drugs official to the pharmacopoeias cannot be manufactured in India from local sources; whether drugs with similar actions can be manufactured from indigenous sources; and to study such drugs in the indigenous systems of medicine as seem to be of value under strict experimental conditions. Colonel Chopra has also since 1926 carried out an all-India enquiry into drug addiction in this country, which has led to very valuable results, and in which the League of Nations has taken a deep interest.

The skin diseases' enquiry was opened in 1921 under Col. Acton. This enquiry has had splendid results, and has introduced order, classification and knowledge into one of the most confused fields in tropical medicine. The number of outpatients seen in this department annually is now over 7,000 and the department is the only one of medical mycology in India.

The Pasteur Institute of Bengal was opened at the School in 1924. The growth of this department has been amazing, and in 1933 it treated 10,058 patients. Owing to the extreme congestion this section has now been moved out to Ballygunge, decentralisation has been introduced and the vaccine is now issued to centres throughout the province.

**The Pasteur
Institute of
Bengal.**

Many other enquiries have been carried out. In 1934 an "essay-review" was published, summarising the whole work of the School from 1920 to 1933.

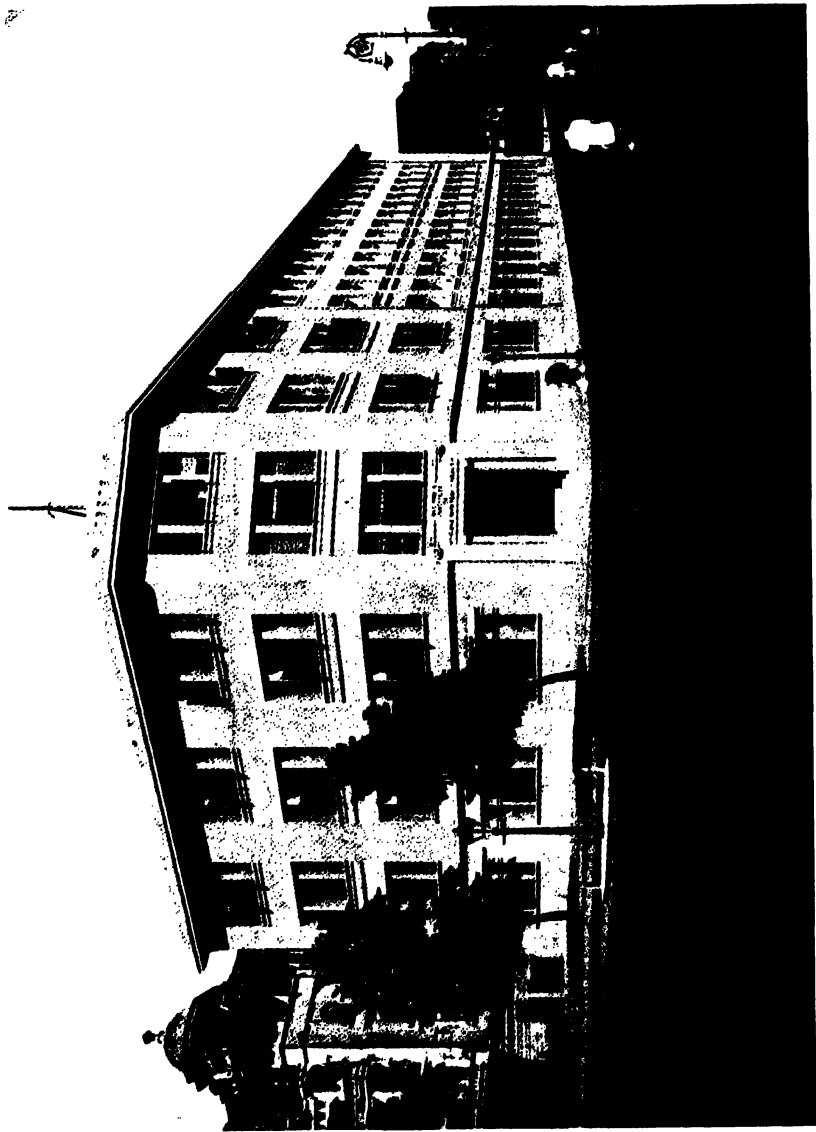
Prior to 1920, medical graduates in India had to go to England to study tropical medicine and hygiene systematically. This was obviously incongruous, and in 1914 Sir Leonard Rogers conceived the idea of establishing institutes in India for Post-Graduate study in tropical medicine and hygiene. Sir Leonard's first proposal was that there should be a School of Tropical Medicine in Calcutta, and an Institute of Hygiene in Bombay and that both of these might be on an All-India basis. Various circumstances and considerations prevented these views from coming to fruition, but it was chiefly owing to Sir Leonard Rogers' perseverance and enthusiasm, and the generosity of the Governments of India and Bengal and various private benefactions that in 1920 the Calcutta School of Tropical Medicine and Hygiene was opened which combined teaching and research in both tropical medicine and hygiene. A Professorship in Hygiene was established, and a course of instruction arranged in the School for the Diploma of Public Health of the Calcutta University. There were obvious limitations to the scope and outlook of this arrangement. Workers highly trained in general hygiene and specialists in some particular branch are needed in India, and as time goes on and public health policy broadens and expands in all Indian Provinces, such workers trained in Indian needs and with Indian experience will be more and more required.

Dr. W. S. Carter, M.D., Associate Director of the Rockefeller Foundation in his periodic tours of India and the Far East, met General Megaw and General Graham on various occasions and became deeply impressed with the necessity for establishing an All-India Institute of Hygiene. Much of the teaching in basic subjects, such as bacteriology and protozoology, for the Diploma of Public Health is similar to that for the Diploma of Tropical Medicine, and as this was being taught in the School of Tropical Medicine, Dr. Carter at once grasped the

obvious advantages of Calcutta as a location for an All-India Institute, and of a site close to the Calcutta School of Tropical Medicine, where the basic subjects would continue to be taught. By this means it would be necessary to duplicate these courses, and at the same time the Institute would deal with purely public health subjects specially related to Indian requirements. As a result of discussion with General Megaw and others, Dr. Carter, on behalf of the Rockefeller Foundation, addressed the Government of India in terms embodying these proposals, offering to provide the cost of acquiring the site selected, and to build and equip an All-India Institute of Hygiene and Public Health, and further asking for the Government of India's assurance that they would meet the recurring cost of staff maintenance after the building was handed over to them. The Government of India gratefully accepted this munificent offer and negotiations for the acquisition of the site were commenced. This was acquired finally in July 1930, and the site was cleared and building commenced in September.

The building is four-storeyed and is E shaped, the long limb being in the centre. Six sections are accommodated, *viz.*, (1) Public Health Administration, (2) Sanitary Engineering (3) Vital Statistics and Epidemiology, (4) Biochemistry and Nutrition, (5) Malariology and Rural Hygiene, and (6) Maternity and Child Welfare and School Hygiene. Each section has one unit rooms for the workers. The working sections are placed in the central limb of the building, facing north with an excellent and unimpeded north light. In the west block are placed the administrative rooms, lecture theatre, practical class rooms, museum, and a large auditorium to seat 200 people. The eastern limb houses store rooms, common room, and lunch room for students, spare working rooms and lavatories, while a separate annexe provides for an animal room on each floor. The library is in the centre block on the top floor. Three unit rooms on each floor and the library and reading room are provided with conditioned air during the hot months of the year. The head of each section thus has a cooled room and in addition there will be a spare cooled unit room on each floor where workers on that floor may work in comfort, or engage in any special work requiring a cooled atmosphere.

Each section is staffed by a Professor, an Assistant Professor,



THE ALL-INDIA INSTITUTE OF HYGIENE AND PUBLIC HEALTH

and laboratory or other assistants. The primary object of the Institute is to bridge over the gulf between the results achieved by pure research and their practical application to the community. Its function will therefore primarily be that of instruction. The subjects for the Diploma of Public Health, Part I (Bacteriology, Protozoology and Public Health Laboratory Practice), will continue to be taught by the staff of the School of Tropical Medicine, but the specialised subjects in Public Health will be taught by the staff of the Institute, each Professor dealing with his specialised subject. The examination for the D. P. H. is conducted by the University of Calcutta, with which the new Institute will in due course be affiliated. It is also intended to provide short Post-Graduate instruction in special subjects for public health workers desiring to pursue advanced study, and the Calcutta University has now instituted a higher degree (Doctorate in Public Health Science) which requires a year's training in the Institute in some special branch of public health science. Considering the importance of maternity and child welfare work and public health nursing, special courses in these subjects has been instituted for women graduates. The Institute will be co-ordinated with the various aspects of practical hygiene and public health all over India, and it is hoped will be able to render assistance to public health administrators and workers, and institute enquiries and investigations of a practical nature in the application of medical research and knowledge for the betterment of the Indian people.

Professors and Assistant Professors have now been appointed to the departments of Biochemistry and Nutrition, Epidemiology and Vital Statistics, and Malariology. The Department of Maternity and Child Welfare has also been opened and is being financed at present by the Countess of Dufferin Fund. Instruction and investigation and research have commenced in these sections. A comprehensive investigation into the cholera carrier question has been started under the auspices of the Indian Research Fund Association. Dr. Linton and Dr. Muir have also been accommodated in the Institute and are working on the biochemistry of the cholera organisms and on leprosy respectively.

OTHER INSTITUTIONS.

The Jatiya Ayurvijnana Parishad or the National Medical Council, Bengal came into being in 1921 through the efforts of the great national leader C. R. Das. The increasing demand in the country for medical relief necessitated by the appalling death-rate from malaria, Kala-azar, Cholera, small-pox and other preventible diseases coupled with the daily growing desire for medical education—as testified by the disappointment of a very large number of qualified students seeking and being refused admission every year into the existing medical schools and colleges—was again in 1921 greatly strengthened by the desire for a professional training of those who had left the University Collège at the call of the Non-co-operation movement.

The National Medical Council, Bengal.

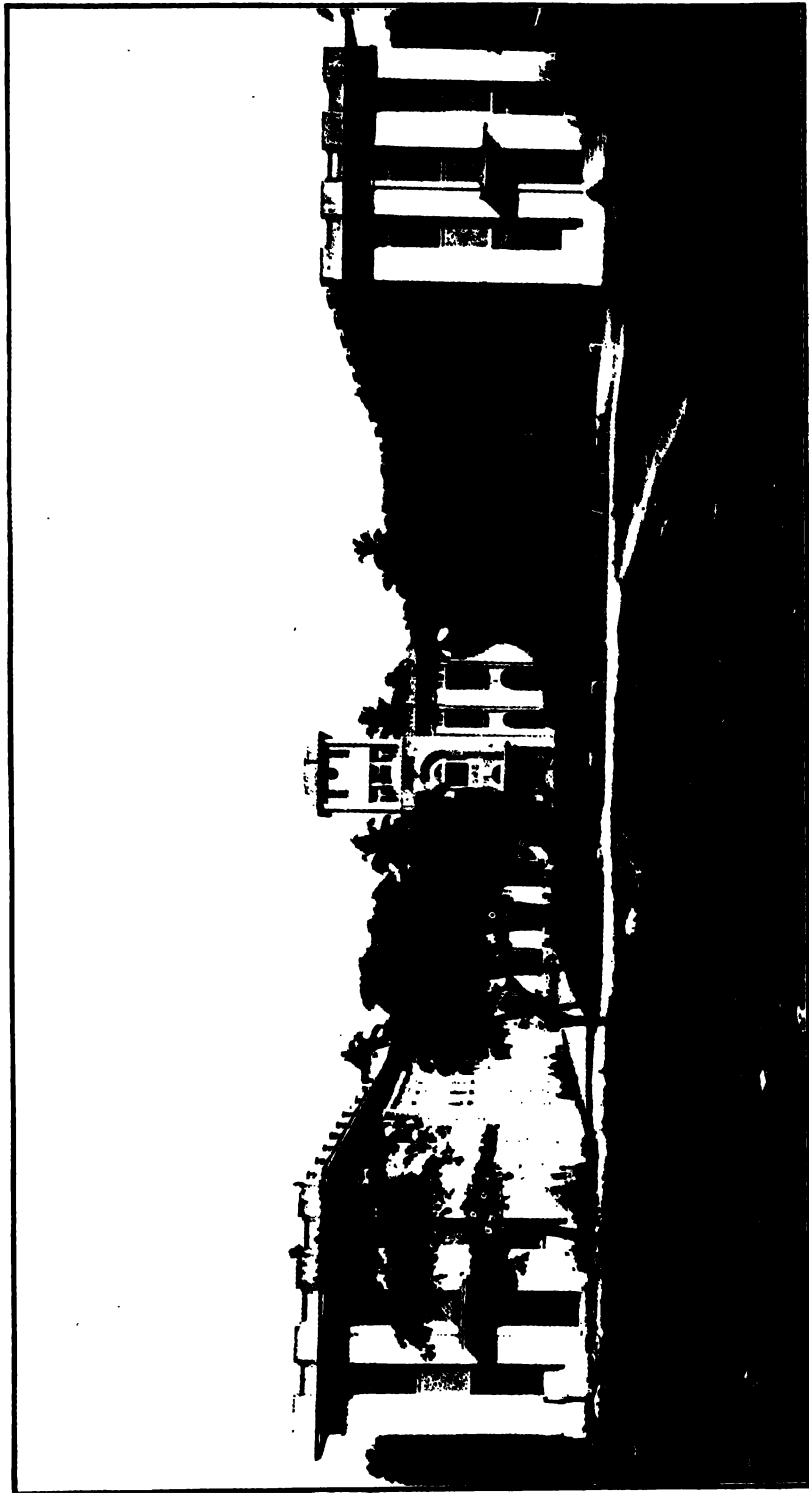
In the same year the National Medical College or the Vaidya-shastra-pith was started. The name was subsequently changed into *Jatiya Ayurvijnan Vidyalyaya* or the National Medical Institute. The controlling body of the Medical Faculty was called the *Jatiya Ayurvijnan Parishad* which was duly registered. The Parishad as the parent body now manages three co-related institutions: the National Medical Institute, the Chittaranjan Hospital and the National Infirmary.

The Institute has now been affiliated to the License Standard of the State Medical Faculty of Medicine which enjoins a course of training for four years.

During the year 1931-32 the Institute had on its rolls 400 students. Of these students coming mostly from Bengal a pretty large number hailed from other parts of India.

The Chittaranjan Hospital with its 105 beds and a well-equipped Out-door Department and also the National Infirmary with its 65 beds provided excellent facilities to students for hospital and clinical work. The Institute has made arrangements with the different special hospitals so that the students get facilities for working.

The number of cases treated in the Indoor during the year 1931-32 was 1205. There are altogether eight departments in the outdoor. The morning outdoors consist of surgical, medical, gynaecological,



'ATIYA AYURVIJNAN VIDYALAYA

Tuberculosis and ear, nose and throat departments. The evening outdoors consist of Kala-azar, Malaria, Venereal and Eye. The number of cases treated in the outdoor during the year was 19,668. There are also Cholera and emergency Wards.

The Institute and the Office are situated at 32, Gorachand Road, the Chittaranjan Hospital at 24, Gorachand Road and the National Infirmary at 189, Maniktola Main Road. The National Infirmary is a Hospital and Home for the Incurables and Diseased destitutes.

The Jamini Bhusan Ashtanga Ayurvedic College was founded in 1916. It is the biggest Institution in Calcutta of its kind and its object

Ashtanga Ayurvedic College.	is to impart to its pupils a thorough and systemetic knowledge of Ayurveda in all its eight branches. These eight branches are the following :—
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- i. Salya-Tantra (surgery and midwifery).
- ii. Salakya-Tantra (treatment of diseases of the eye, the ear, the nose and the throat).
- iii. Kaya-Chikitsa (medicine).
- iv. Bhuta-vidya (a treatment of mental diseases).
- v. Kaumarabhritya (Child Hygiene and treatment of children's diseases).
- vi. Agada-Tantra (Toxicology).
- vii. Rasayana-Tantra.
- viii. Vajikarana-Tantra.

There are also arrangements for teaching Anatomy, Physiology, Botany, Chemistry, Pharmacology, Therapeutics etc.

Attached to the College is a Hospital with accommodation for 125 patients. The hospital is broadly divided into two departments, medical and surgical and the students have thus an excellent opportunity of getting a full clinical training and practical knowledge both in medicine and surgery. The treatment of cases in all the departments is carried on according to Ayurvedic methods and the students of the College are also given practical training in the diagnosis and treatment of surgical cases both according to Ayurvedic and modern surgery.

There is also an attached Outdoor Dispensary which has both the medical and surgical departments. The average daily attendance of patients is about 300.

There are two courses of study, the pass course extends over a period of 4 years and the Honours course over a period of 5 years.

The equipments of the College are : a pharmacy with necessary apparatuses for the preparation of medicines, a Drugs museum, a surgical museum, a pathological and research laboratory, a garden for the cultivation of medicinal plants, an anatomical museum, a library etc.

The object of the Institution is the cultivation of the ancient Indian Ayurveda with all the advantages and accesories derivable from modern medical science. The prescribed text books are mostly in Sanskrit and Bengali but for the modern sciences the books in English like Hill's *Physiology*, Halliburton's *Physiology*, have been prescribed, for study.

In the year 1920, a dental training institution was started in the office of Dr. R. Ahmed, D.D.S., F.I.C.D. Dr. Ahmed realised the need in India for trained dentists and undertook to train men in elements of the profession so that they might engage in practice with some knowledge of Dental Science. The school started by him continued its work till 1923-24 when further accommodation was needed. The school was shifted to 261, Bow Bazar Street.

**The Calcutta
Dental College
and Hospital.**

The next important step was organization of a proper curriculum. The course was formulated along the lines of similar institutions in America and on the continent of Europe. Dr. Ahmed now gathered round him a number of trained Dentists and physicians to teach subjects and got the school registered under the name *the Calcutta Dental College and Hospital*. It is the only Institution of the kind in India.

Since 1924-25, 122 students have been granted diplomas. Five



NATIONAL INFIRMARY

of these were ladies. The students hailed from Burma, Ceylon, Siam and Persia. Several of these have gone abroad for Post-graduate studies abroad and have made a very creditable showing.

As the original building proved insufficient the College was removed to 33, Bow Bazar Street in 1926. Each year brought an increase in the number of students and the number of patients in the Clinic until even that building was not adequate. It was removed in 1931-32 to 249-B, Bowbazar Street where it is being conducted.

The College and Hospital are managed by an Executive Committee. The Faculty at present consists of 23 professors, lecturers and demonstrators. The course extends over three years and the curriculum is as follows :

First Year.—Physics, Inorganic and Organic Chemistry, Anatomy, Physiology, Dental Metallurgy, Operative Dentistry, Prosthetic Dentistry, Materia Medica.

Second Year.—Anatomy, Physiology, Dental Therapeutics, Pathology, Bacteriology, Surgery, Local Anesthesia, Exodontia, Operative Dentistry, Prosthetic Dentistry, Materia Medica.

Third Year.—Oral Surgery, Pathology, Radiology, Dental Jurisprudence, Dental Ceramics, Professional Ethics, Operative Dentistry, Prosthetic Dentistry, General and Dental Hygiene, Orthodontia.

In 1933 the total number of students on the roll was 88 and 5628 cases were treated in the Hospital. The only public help which the Institution has so far received is a grant of Rs. 1,000 per year from the Calcutta Corporation.

In the year 1907 the late Dr. S. K. Mullick, M.D., M.S., C.B.E. started a medical institution under the name of "National Medical College of India" and in 1910 a Hospital called "Calcutta Free Hospital" (subsequently styled as Kings Hospital). They were both located at 191, Bowbazar Street, Calcutta. Both the School and Hospital were registered under Act XXI of 1860 as two different Societies.

**The Calcutta
Medical
Institute.**

In 1914 the present site at 101/3, Upper Circular Road was secured from the Corporation of Calcutta on 99 years lease. The above lease was subsequently affirmed in 1932 in a supplementary document between the Corporation of Calcutta and the Calcutta Medical Institute.

A moderately-sized three storied building was constructed for the Hospital by public donations on the said leasehold land. It accommodated at first about 20 indoor beds with an outdoor department.

Dr. S. K. Mullick tried for sometime to get affiliation from the Bengal Council of Medical Registration and he was informed by the said Council in November, 1922 that before the institution could be recognised, it should be reorganised and reconstituted. It was found that the changes in the objects of the two then existing societies were necessary and it was deemed advisable to have one institution instead of two separate registered Societies governing the teaching institution and the hospital.

Accordingly in April, 1923 a new Society called " The Calcutta Medical Institute " was formed with a strong Executive Committee, composed of eminent medical men, veteran educationists and some well known citizens, which was incorporated and registered under Act XXI of 1860.

The newly formed Society took over charge of all the assets and liabilities of the two Societies, the National Medical College of India and the Calcutta Free Hospital which were both dissolved in May, 1923.

The new Society had to meet creditors of the two old societies who claimed a large amount due to them which were paid off gradually as debts of honour.

The Calcutta Medical Institute at once set themselves earnestly for the recognition of the Calcutta Medical School by the Bengal Council of Medical Registration and the attached Hospital by the Government. A committee, appointed by the Bengal Council of Medical Registration, after two inspections and having been satisfied

with the suggested improvements, recommended affiliation of the School and laid down the manner in which the students might get their clinical teachings in other hospitals. The authorities of School agreed to the said conditions and arranged for the clinical teachings in the Mayo, Sambhunauth Pandit, Howrah General and S. V. S. Marwari Hospitals on payment of fees amounting to about 6,000 a year. Besides extensive improvements had to be effected in the Physiological, Pathological, Anatomy and Materia Medica departments.

In 1923 affiliation was granted to this School up to Intermediate standard temporarily for 2 years and in 1926 it was found that the School was fit to train students upto the Final Licentiate standard of the State Medical Faculty of Bengal and again temporary affiliation was granted and one of the conditions imposed was that the attached Hospital should be enlarged to hold 150 beds.

The Executive committee of the Institute was helped by an appeal over the signatures of late Lord Sinha of Raipur, the late Sir Kailash Chandra Bose Kt., Sir Hariram Goenka Kt and Mr. S. N. Mallik C.I.E. and it was fairly responded.

The necessity of an up-to-date Anatomy Block of the modern style was found essential and in 1927 a three-storied building of the approved type was constructed and fitted with 22 marble dissection tables etc., at a cost of about Rs. 60,000.

To meet the terms imposed by the Bengal Council of Medical Registration on the authorities of this Institute, viz., to have 150 beds in the attached hospital, the authorities had a plan for a big three-storied hospital prepared in consultation with Major-Gen'l Tate, the then Surgeon General with the Government of Bengal and Mr. Hathaway, the then City Architect, Corporation of Calcutta.

On 20.11.26 His Excellency, Lord Lytton, the then Governor of Bengal laid the foundation stone of the new Hospital Block and was graciously pleased to recommend public help as an useful and needed institution. Later on with the advise of Major-Gen'l Tate and

other experts, additions and alterations were deemed necessary and a tall four-storied building was decided upon which could accommodate 105 beds with paying cabins, big operation theatres for male and female, labour rooms, etc. and quarters for nurses, family quarters for Resident Medical Officer and quarters for House Staffs.

The enlargement of the Hospital has removed a painful difficulty of students being obliged to go elsewhere for clinical teaching.

More space was required. So in 1929 under the provisions of the L.A. Act about 8 cottahs of land lying to the east were acquired for about Rs. 18,000 and in 1930 the adjoining three-storied building being premises nos. 2 & 2/1, Maharani Swarnamoyee Road were purchased by private treaty for about Rs. 45,000.

In 1929-30 the construction of the New Hospital Block commenced and during 1931 for want of funds there was a lull in the progress of the building and it was completed in 1932 and began to accommodate patients from January 1933 though it was formally opened by Hon'ble Sir B. P. Sinha Roy Kt., Minister to the Government of Bengal on 17.2.33.

The Corporation of Calcutta and the Government of Bengal were pleased to sanction Rs. 1,45,000 and Rs. 50,000 respectively towards the capital grant for the construction of the New Hospital Block and about Rs. 40,000 were received from the generous public including some members of the Institute out of Rs. 3½ lacs spent for. The balance being met from Institute fund and by loan.

The Institute is now the recipient of Rs. 24,000 and 20,000 as annual grants for its attached Hospital from the Corporation of Calcutta and the Government of Bengal respectively.

Of the endowments received from the generous public amounting to a little over a lac of rupees, special mention may be made of the princely donation of Rs. 50,000 in G.P. notes by late Mr. Girindra Nath Roy who died on 28.11.34 for the maintenance of a ward of 14 beds named after his late father "Mohendro Nauth Roy."

A New lecture Hall which can accommodate about 250 students had been built in July, 1932 at a cost of Rs. 7,000.

To provide for pressing additional accommodation for hospital beds and the Emergency and Outdoor departments, the authorities had to remodel the former threestoried Hospital Block to a fourstoried building with a number of rooms etc., added on all sides at a cost of about Rs. 50,000.

Ever since the recognition of the School as fit to train up and send students to the several State Medical Faculty Examinations, the result of this School has been uniformly gratifying in comparison with those of the other Medical Schools of the Province. Every emulation is afforded for the growth of healthy corporate life amongst students.

The result of treatment in the Hospital has been satisfactory throughout and the rapid popularity of the hospital has attracted the attention of the public.

Through the efforts of a small band of sincere and hearty workers this non-state aided Medical School was the first in Bengal may in India, to receive recognition from the Bengal Council of Medical Registration and is an example of what can possibly be achieved by honest and well-directed endeavour.

The hospital owes its foundation to the late Mr. Pravash Chandra Ghose, who was himself a victim to tuberculosis. This young gentleman, who was the only son of the late renowned Dr. Chandra Mohan Ghose, keenly felt the absence of a tuberculosis sanatorium in the Province and bequathed the whole of his property worth about 2 lacs of rupees to a Board of Trustees for the purpose of founding tuberculosis wards or hospitals. The trustees conveyed the assets of the whole of the estate to the Calcutta Medical Aid & Research Society registered under Act XXI of 1830. The Society lost no time in

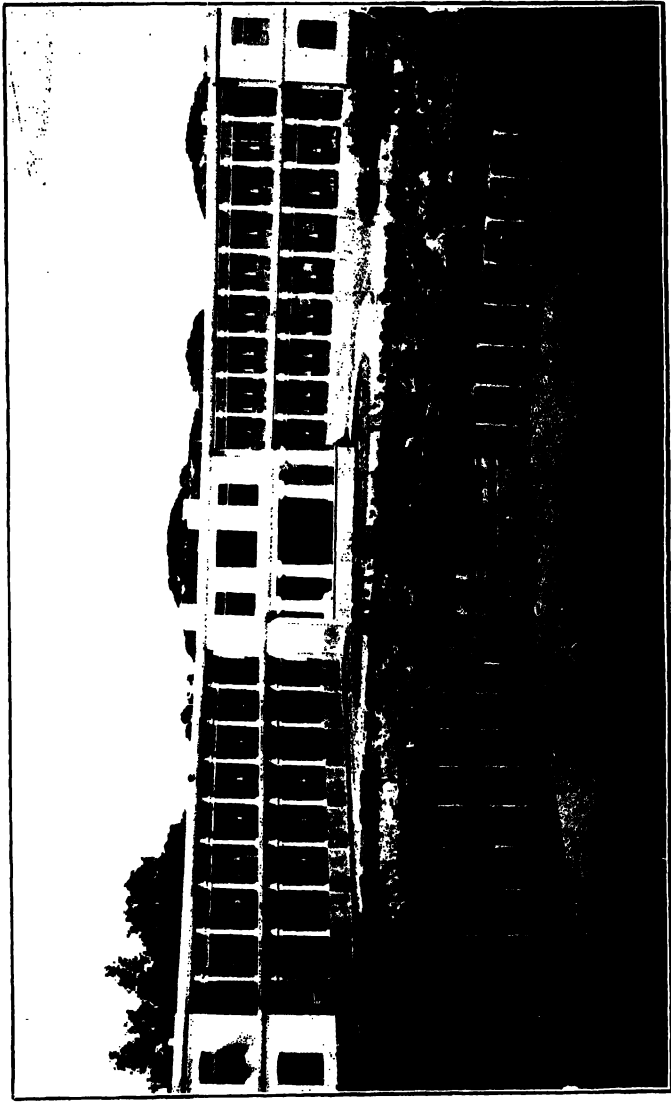
**Jadabpur
Tuberculosis
Hospital.**

acquiring lands at Jadabpur, six miles south of Calcutta, where it erected a small cottage hospital to accommodate 4 patients in the year 1923. Money has since been received from the Local Government, Calcutta Corporation and other public bodies and individuals and the hospital is now in a position to accommodate 75 patients.

The hospital is situated at Jadabpur about six miles south of Calcutta and easily accessible from Calcutta both by road and rail. The institution is approachable by a good motoring road from Calcutta in half an hour's time. The Eastern Bengal Railway Station, Jadabpur, is only hundred yards distant from the premises. In selection of this site, the Society was guided by many considerations. Their first consideration was how best to serve the interest of the larger and poorer section of the population of the city, where the incidence of tuberculosis is highest. Their next aim was to work at a minimum cost by enlisting as far as possible the honorary services of the best medical practitioners in the city. It was felt that these objects would be achieved by selecting a site which, while away from the congested part of the city, would be easily accessible to patients, doctors and also to the relations and friends of patients. Not only would patients be saved the expenses and inconveniences thereby, of travelling to distant sanatoria, this proximity to relations would apart from the good reactions on the patients themselves provide an opportunity of spreading knowledge in methods of prevention from infection and general rules for the treatment of tuberculosis. Besides, it increases the value of the institution as a centre of propaganda and research work.

Accommodation.—The hospital has at present accommodation for 75 patients. Ten beds are primarily intended for Anglo-Indians and Europeans and 14 beds are reserved for women patients.

Equipment.—The hospital stands on 30 bighas of land amidst charming rural surroundings. It is equipped with upto-date sanitary fittings and arrangements for electric light and water. It is also provided with an well-equipped Operation Theatre, X-ray apparatus and Ultra-Violet Ray lamps. There are besides, a patients' library, arrangement for light indoor games and a wireless set to provide recreation for patients.



JADABPUR TUBERCULOSIS HOSPITAL

Maintenance.—The hospital is maintained by annual grants from the Calcutta Corporation, fees recieved from patients, private donations and income derived from endowments and rents from the Narkeldanga property (part of the estate of the late Mr. P. C. Ghose.)

SOME OF THE CALCUTTA HOSPITALS.

- (1) *Medical College Hospital.*—Originally started in 1838. Enlarged in 1852 when it was moved to its present site. Now has over 300 beds. The Eden Lying Hospital, the Ezra Hospital for Jews, and the Eye Infirmary were subsequently added to it.
- (2) *Presidency General Hospital, Calcutta.*—For Europeans, contains accommodation for 233 patients. Attached to this hospital is a small laboratory where Sir Ronald Ross carried out experiments with proteosoma which solved the great malaria problem.
- (3) *Campbell Hospital, Calcutta.*—Associated with the Campbell Medical School. Started in 1867—the largest Hospital in India with accommodation for about 800 patients.
- (4) *Carmichael Medical College Hospital.*—Associated with the Carmichael Medical College, Belgachia. Has accommodation for 100 beds.
- (5) *Albert Victor Hospital.*—Government Hospital for the treatment of leprosy, Gobra, Entally.
- (6) *Ashtanga Ayurveda Vidyalaya.*—Hospital 170 Raja Dinendra Street, Shyambazar.
- (7) *Calcutta Homoeopathic Hospital Society.*—265 Upper Circular Road.
- (8) *Calcutta Medical Institute Hospital.*—301/3, Upper Circular Road.
- (9) *Carmichael Hospital for Tropical Diseases.*—Chittaranjan Avenue.

- (10) *Dufferin Hospital*.—1, Amherst Street.
 (11) *Eden Hospital*.—College Street.
 (12) *Mayo Hospital*.—Strand Road [established 1792].
 (13) *Prince of Wales Hospital*.—Associated with the Calcutta Medical College.
 (14) *Sambhunath Pandit Hospital*.—11, Elgin Road.
 (15) *Chittaranjan Sevasadan* founded to commemorate late Deshbandhu C. R. Das and located in his house left by him for the purpose.
 (16) *Sree Vishuddhananda Saraswati Marwari Hospital*.
 (17) *Vishwanath Ayurveda College and Hospital*.

TECHNICAL EDUCATION.

There are at present a number of colleges and schools for technical education in the Province. The *Bengal Engineering College* is the biggest institution managed by the Government for imparting higher education in Engineering. The **Bengal Engineering College** was founded in 1880. It is located at Sibpur on a beautiful site on the banks of the Hooghly and in the close proximity of the Royal Botanical Gardens. On the 31st March 1933 the College had 288 pupils on its roll, 167 in the Civil Engineering Classes, 74 in the Mechanical and Electrical Engineering Classes and 47 in the Industrial classes. The College is affiliated to the University of Calcutta. The results of the College in the various examinations held in 1933 were as follows :

Examinations.	Candidates.	Passes.
B. E. (Civil Engineering) ...	... 38	29
I. Ec. ...	... 61	40
B. E. (Mechanical Engineering) ...	... 7	6
Associate in Mechanical Engineering ...	... 5	5
Diploma in Mechanical and Electrical Engineering ...	... 11	

The College has three Departments :

I. The Civil Engineering Department, affiliated to the standard of the Degree of Bachelor of Engineering in the Civil Engineering Branch and offering the full College Diploma of "Civil Engineer". The course extends over five years—four years at the College followed by one year of practical training on works in progress.

II. Mechanical Engineering Department, offering course for the Diploma and Associateship in Mechanical and Electrical Engineering. The full course extends for a period of six years.

III. Mining Department, offering course for the Diploma in Mining. The course extends for 3 years.

There is an Engineering School at Dacca called the Ashanullah School of Engineering which had a total enrolment of 433 pupils in 1932-33. The school is maintained by the Government. The Calcutta Technical School is another senior technical school which imparts vocational education. On the 31st March 1933 it registered 175 pupils. The Kanchrapara Technical School had on that date 77 students on its rolls.

**Other
Engineering
Schools.**

Some of the technical Institutes have come into being through public effort. The Ballygunge Engineering College has been recently started with the object of imparting technical education in Mechanical Engineering, Electrical Engineering, Motor Engineering etc. through the medium of vernacular. The most successful enterprise of this kind consists in the foundation of the Bengal Technical Institute.

**Ballygunge
Engineering
College.**

The Bengal Technical Institute was founded in 1906. When started, Mr. T. Palit (afterwards Sir Tarak Nath Palit) was the moving spirit. Subsequently, in 1910, it was amalgamated with the National Council of Education, Bengal, and since then it has been under the control and management of that

**The Bengal
Technical
Institute.**

spirit. Subsequently, in 1910, it was amalgamated with the National Council of Education, Bengal, and since then it has been under the Body. Sir Rash Behari Ghose was its first President, and he was succeeded in that office by the late Sir Ashutosh Chaudhuri. From time to time the office of the Secretary has been filled by some of the most prominent men in Bengal's public life, such as the late Mr. Rasul, Sir Devaprasad Sarvadhicari, the late Sir Ashutosh Chaudhuri and Mr. Fazlul Haque.

In 1922 the *National Council of Education* was able to secure from the Corporation of Calcutta a fine piece of ground measuring about 100 bighas at Jadabpur on Gariahata Road, within 5 miles of Sealdah and in the immediate vicinity of the Jadabpur Railway Station, and on that site a big Technical Institute has been built. It contains Workshops with a Power House and Laboratories for Mechanical Engineering, Electrical Engineering, Chemical Engineering and Physics. It has also a central College Building and contains a rich and well-equipped Library. The outlay on these buildings has been Rs. 7,00,000 and the value of the machinery put up in the Workshops and the Power House is about Rs. 2,00,000. The equipment of the four laboratories has cost the Council about Rs. 2,50,000. The building and the equipment are estimated to cost Rs. 1,00,000. The books in the library are worth about Rs. 30,000.

The Bengal Technical Institute carries on the following courses :—

A. Four Years' Course in each of the following branches :—

- (1) Mechanical Engineering.
- (2) Electrical Engineering.
- (3) Chemical Engineering.

B. Three Years' Course in Mechanical and Electrical Engineering combined. In this course the rudiments of Engineering theory are taught, most of the students'

time being spent in the Workshops, Power House and Drawing-shop.

C. Two Years' Course in Survey and Draftsmanship.

D. The Apprentice Department provides theoretical training mainly for Apprentices employed in Workshop of the Corporation of Calcutta.

The Technical Institute is served by an efficient staff including seven Graduates of the best American, German and British Universities and Technological Institutes, besides some brilliant scholars of Calcutta University and of our Institute; and on an average there is one teacher for every 15 students. The number of students on the rolls is about 650. The majority of them are day-scholars, as hostels accommodation is available only for 100 students. Steps are being taken to build at least half a dozen Hostels and to make the institution a residential one. A little over 5 per cent. of the students on the rolls enjoy free-studentships awarded on consideration both of poverty and intelligence.

Students of the Institute hail from all parts of India, and Graduates of the Institute are now to be found in almost all important Factories, Workshops and Industrial organisations. Some have started independent businesses in Calcutta and outside.

The following is a list of the more important donors :—

	Rs.
Sj. Brojendra Kishore Roy Chowdhury ...	5,00,000/-
Late Maharaja Suryyakanta Acharyya Chaudhuri ...	2,50,000/-
„ Subodh Chandra Mallik ...	1,00,000/-
„ Durgadas Bose ...	25,000/-
„ Sir Rashbehari Ghose ...	16,00,000/-
„ Gopal Chandra Sinha ...	1,00,000/-
Total ...	25,75,000/-

In addition to this the Bengal Technical Institute receives an annual Grant-in-aid of Rs. 30,000/- from the Calcutta Corporation.

COMMERCIAL EDUCATION.

Facilities for higher commercial education are provided by the Calcutta and Dacca Universities and the Commerce Department of the Vidyasagar College, Calcutta. The degrees given by the University are the Bachelor of Commerce (B. Com.) and Master of Commerce (M. Com.). In 1923, 23 candidates appeared in the M. Com. examination out of which 19 passed. Students who obtained the B. Com. degree of the Calcutta and Dacca Universities were 90 and 13 respectively. The total number of candidates appearing was 183 and 21.

The number of commercial schools in the province is 24 of which, the *Government Commercial Institute* is under Government management.

The Institute first took form under the auspices of Presidency College, Calcutta, in 1905 at a time when the problems of Commercial Education had not engaged the serious attention of educationists and business men in most other parts of India. Even to-day, it stands alone in the Province in its character, aims and management.

**Government
Commercial
Institute,
Calcutta.**

The Institute affords training of a practical character, vocational enough to be deemed technical, well up-to-date, and capable of direct application to the trade of the City. The subjects taught are approached in an undogmatic way as opposed to the academic methods followed in the Universities and Arts Colleges, the aim being to encourage in the students the growth of a business frame of mind.

There are arrangements for a comprehensive course of study, covering a period of two years, in the Day classes, which are meant for young aspirants to business, who have just left school. The Evening classes offer facilities to those who may have received the necessary preliminary training in the Day classes and have already found employment and who are desirous of bettering their qualifica-

tions. There are special arrangements for classes in connection with the training of students for the examinations of the London Institute of Bankers, the Accountancy Diploma Board, Bombay, and those held for recruitment to the Railway Accounts Service.

The Institute follows courses of study carefully prepared under the guidance of the Board; affiliates other commercial institutions in the province; holds its own examinations; and grants its own Diploma.

It is a Government institution controlled by a Board of Management on which the influential section of the Mercantile community, both Indian and European, is fairly represented. The Institute had 373 pupils on its roll in 1933.

A class was started in April, 1893 in a small room in the City College at No. 13, Mirzapur Street by the late Mr. Srinath Sinha, which afterwards became the Calcutta Deaf and Dumb School. In May of the same year he was joined by the late Mr. Jamini Nath Banerji and Mr. Mohini Mohan Mozumdar. In 1896 Mr. Banerji was sent to England and America for a thorough training in the art of teaching the deaf. He was the first Principal of the school and served in that capacity till the day of his death in December, 1921. The present position of the school is largely due to his great organising abilities and superior merits as a teacher of the deaf.

The present home of the school at 293, Upper Circular Road was built in 1903. The following gentlemen rendered great services to the school in those difficult days of its infancy, *viz.*, the late Mr. C. W. Bolton, C.S.I., I.C.S., who was the President of the school; the late Mr. Nobin Chand Boral, one of the Vice-Presidents of the school; the late Mr. Umes Chandra Dutt, who was the first Secretary of the school and served the school in that capacity till the day of his death; and the late Principal F. J. Rowe of Presidency College, Calcutta.

The school is managed by an Executive Committee elected by

the donors and subscribers to the school. Amongst the benefactors of the school the name of Raja Sarat Chandra Rai Chaudhuri Bahadur of Chanchal, Malda, should be prominently mentioned. He has given to the school an endowment of 2 lakhs, and a donation of Rs.20,000 towards the cost of an extension to the present buildings.

The school receives a Government grant of Rs. 1,000/- per month and a Calcutta Corporation grant of Rs. 550/- per month.

The Oral Method of Instruction is employed in teaching the students, by which they are taught to speak and understand others speaking by watching the movements of the speakers' lips. The use of Signs is not allowed. Finger-Spelling also is not used.

There is an Industrial Department attached to the school, where the boys are trained in the different crafts. There we find Drawing, Painting, Papier Mache work, Clay-Modelling, Printing, Tailoring, a Machine Shop, Smithy, Carpentry, etc.

There is a Boys' Hostel attached to the school. A Hostel for Girls will also be opened within a very short time. Many of the assistant teachers reside in the Hostels as resident teachers to look after the boarders, and to help them in their studies. There is also a Normal Department to train teachers. Teachers trained in the school have started other schools in different parts of India, such as Dacca, Barisal, Chittagong, Mysore, Baroda, etc.

The Calcutta Blind School was founded in 1897 with a view :—

**Calcutta
Blind
School.**

- (1) To provide a home for the homeless and helpless blind without any distinction of sex, nationality or religion ;
- (2) To impart, as far as practicable, scientific, industrial and literary education to the blind.

The ideal of giving a complete education and training to the pupils, so as to fit them to be self-supporting members of the community, has always been kept in view.

The School has the following five departments :—

A Preparatory School, a Secondary School, a Technical School, a Music School and a Normal Class.

The Course of Instruction is as follows :—

1. Physical Education, including, Gymnastics, Drill, Swimming, Cycling and other Athletic Sports.

As the vitality of the ordinary blind person is said to be about 25 per cent. below that of his sighted compeer, it is essential that careful attention be paid to physical training.

2. General Education includes (i) in the Preparatory Course, Kindergarten, Reading, Writing, Arithmetic, Modelling, Nature Study and Object Lessons; (ii) in the Secondary Course, Literature (English, Hindi, Bengali and Sanskrit), History, Geography, Mathematics, Shorthand and Typewriting. In the Secondary Course, students are prepared for the Matriculation Examination.

3. In the Music School, instruction is given both in vocal and instrumental music. Special attention is paid to those who intend to follow Music as a profession.

4. Technical Education includes manufacturing and repairing of Cane and Bamboo furniture, etc., Coir Mat Weaving, Weaving on looms and the Wool Knitting for the girls.

Manipulation of Carpentry tools is taught to help the pupils in their trade.

5. In the Normal Class, teachers are trained in the latest methods of teaching the blind.

Great attention is always paid to hand-training and development of touch, which is the essential sense and almost the only asset of the blind, without which their training is an impossibility. The pupils also have lessons in learning locality and direction, for the intuitive faculty which guides some children is entirely wanting in others.

Suitable readings from the dailies and periodicals are given every morning and evening, and weekly study groups are held to keep the pupils in touch with the outside world, and to enlighten them on current events and topics.

The School is located in the open country on the Diamond Harbour Road, Behala, 6 miles south of Calcutta. There are spacious residential and school buildings, and large playgrounds. Teachers both in the Boys' and Girls' Departments are in residence and look after the pupils. The Principal and the Superintendent also have their quarters in the compound.

Serampore is the chief town of a subdivision of the Hooghly district. It is located at a distance of 13 miles from Howrah or from Sealdah by the Eastern Bengal Railway to Barrackpore and from these by ferry service across the river. Being situated on the Grand Trunk Road, motorists frequently visit the station, for town is of historical importance and there are many things of interest to be seen. Serampore was at one time considered a health resort of Calcutta and was frequented by week-end visitors from Calcutta and other places. It is an important centre of the Jute and Cotton Mill industries and has, besides, some seven factories where silk dyeing and printing are carried on.

**Government
Weaving
Institute,
Serampore.**

The hand loom weaving industry of Serampore dates back to antiquity. There are reasons to suppose that the industry flourished here about three centuries ago. There were then about 600 weavers at Serampore who carried on their profession with handspun yarns of medium and fine counts on their primitive throw-shuttle looms, and made quite a lucrative business out of it. But times changed and the artisans found that cotton weaving could not enable them to make both ends meet. Accordingly they turned their attention to silk weaving, and Serampore soon became one of the chief centres of silk manufacture. Some improvements were effected in the various processes involved and the fabrics were exported to all parts of India; but the real great change took place when the Danish settlers made Serampore their home. A Danish gentleman brought with him an improved

loom which, it was said, would double the output of the primitive loom. This was the epoch-making fly-shuttle loom which has revolutionised handloom weaving and may well be said to be the salvation of the industry. The gentleman, however, kept the loom locked up in a room to which no one had access. The weavers of the locality grew curious; and one evening, as luck would have it, a local blacksmith was afforded an opportunity of seeing the loom and eventually, he is said to have made the first fly-shuttle slay. This is the story which is narrated and believed at Serampore of the introduction of the first Serampore-made fly-shuttle slay. This was about 150 years ago. The Serampore weavers readily took to the new loom, and they used it for silk weaving and other goods till about 50 years ago, when the silk industry for some reason received a set back. The industry gradually declined, and it is said that Murshidabad during this period captured the trade, especially as the growing of silk was also done there. The Serampore weavers naturally turned their attention to cotton weaving, and this is still done here, as Serampore has become famous in the market for its dhooties and sarees of medium and fine counts. All these cloths are woven on fly-shuttle looms, and the throw-shuttle loom is practically extinct at Serampore.

In the year 1901 a Conference of Directors of Public Instruction of the various provinces was held at Simla to consider the question of industrial education in India. As a result of their deliberations, the Director of Public Instruction, Bengal, submitted a report proposing that a school should be established for the purpose of giving instruction in up-to-date methods of hand weaving, as, next to agriculture, handloom weaving constituted the most important industry of Bengal. A special Committee was then appointed to institute enquiries into the economic conditions of the handloom industry and the causes of its decline, and to suggest remedial measures. They were unanimous in their opinion that the industry still possessed great vitality and that it could be revived by the introduction of fly-shuttle looms and by instruction in modern methods of weaving. Serampore was selected as the most suitable centre at which operations could be commenced, as it contained a large and intelligent artisan population who had already adopted—

- (i) the fly-shuttle loom which nearly doubles the mechanical efficiency of the primitive loom ; and
- (ii) the cage creel, device, which, at a trifling cost, enables the weaver to lay 50 to 100 warp threads in one operation, in place of the primitive process by which only one or two threads constituting the warp could be dealt with.

Thus the Weaving Institute at Serampore came to be established with the object of giving technical instruction in the best and latest methods of handweaving, of extending a knowledge of the mechanical improvements which make the modern handloom so vastly more effective an instrument than the primitive looms still widely used by the weavers in Bengal and so of strengthening and reviving the weaving industry in this country. With these objects in view two quite distinct grades of introduction are given, forming higher and lower classes—

- (i) to young men of a fair degree of education who may be trained as teachers, managers and organisers of the weaving industry ; these form the higher classes.
- (ii) to actual handloom weavers from Serampore and other places ; these form the lower, or artisan classes.

As the scheme was entirely of an experimental nature it was decided to accommodate the Institute in temporary buildings, and Raja Kishorilal Goswami Bahadur of Serampore very kindly placed one of his buildings at the disposal of Government for the purpose at a nominal rent. Subsequently a piece of land measuring about 14 bighas was also acquired for the location of the permanent buildings of the Institute. Meanwhile the Swadeshi movement of 1905 helped to bring the scheme to a head and contributed to the speedy establishment of the School. In addition to the Institute buildings, there are three hostels attached to the Institute for Hindu, Muhammadan, and Christian boarders, respectively. Each of these hostels is under the supervision of a Superintendent controlled by the Principal, and the health of the students is looked after by the authorities of the Walsh Hospital, Serampore.

The Institute was formally opened in the year 1909 under a Principal (recruited from England), with an Assistant Principal and a small staff. The Institute since the day of its inception has been very popular, and its name is now familiar throughout India to those interested in the handloom weaving industry, as this is the only Institute of its kind where young men of the undergraduate type are trained in the practice and theory of handloom weaving and its allied subjects on the lines of the Manchester College of Technology. The Institute has been so popular that although a new building was rented by way of extending the accommodation over 2,000 applicants had to be refused admission for want of accommodation in 1927. The Institute registered 147 pupils on the 31st March 1933 against 138 on the corresponding date of the previous year.

In 1883, a Committee was appointed by the Government of Bengal to consider the expediency of establishing a Veterinary College in Calcutta. The committee strongly urged the necessity of the establishment of a Veterinary College and Hospital near Calcutta, but owing to the heavy expenditure involved by the proposals of the Committee, the Local Government was compelled at that time to defer further consideration on the subject. The question was again taken up in 1886 and a scheme was submitted by the Government of Bengal to the Government of India, in which definite proposals for the establishment of a Veterinary College in Bengal were made, but the introduction of the scheme was again deferred owing to the then existing circumstances of financial pressure. The subject was again taken into consideration in connection with the Technical college at Sibpore and a modified scheme involving a smaller outlay than had been originally proposed was submitted. This later scheme was being considered when it came to the notice of Mr. M. Finnucane, the then Director of Land Records and Agriculture, Bengal, that there had already been established at Sodepore, in the neighbourhood of Calcutta, Pinjrapole where some 1,300 animals were daily fed and medical treatment was given to them. This institution was founded by some native Marwari gentlemen of Burra Bazaar, Calcutta, in 1885 and was supported by donations from the public, which already amounted to three lakhs of rupees. It was suggested that a Veterinary School might be

**Bengal
Veterinary
College.**

established in the same place and worked in connection with the Pinjrapole. The Committee of the Pinjrapole accepted the proposal under certain conditions and undertook to provide a site, free of charge for the Veterinary School, and they were willing to contribute Rs. 30,000 towards the contribution of the necessary buildings.

Dr. Kenneth McLeod, who was one of the members of the Cattle Plague Commission of 1871 and of the Committee appointed in 1883, had, with Mr. Finnucane, visited the locality on 25th February, 1890, and they were both of opinion that the offer of the Pinjrapole Committee might be accepted. Sir Dinshaw Maneckjee Petit of Bombay also offered to contribute Rs. 25,000 towards the cost of the Hospital. When matters reached this stage, the question of a more suitable site arose. Various sites were proposed, such as Entally, Sibpore and Bhagalpore. But afterwards, Belgachia, where Raja Shew Bux Bagla, President of the Managing Committee of the Calcutta Pinjrapole Society, owned a garden, was selected as the best site. In December 1892, orders were passed by Government to make a commencement of actual work in connection with the Institution. The foundation stone was laid by Sir Charles Elliot, Lieutenant-Governor of Bengal, on the 20th April, 1892, and the institution was opened on the 10th January 1894.

Thus the Bengal Veterinary Institution, consisting of the Kenneth MacLeod Veterinary School and the Sir Dinshaw Maneckjee Petit Veterinary Hospital, was established at Belgachia by the Government of Bengal as a school for instruction of students of Veterinary Science and as a hospital for the treatment of sick and injured animals, mainly through the munificence of Raja Shew Bux Bagla of Calcutta, who, in memory of his late father Babu Ramdayal Bagla, made a gift of $3\frac{1}{4}$ bighas of land as a site for the school and further subscribed Rs. 30,000 towards its erection and Sir Dinshaw Maneckjee Petit who gave Rs. 25,000 towards the cost of the hospital, the Government of Bengal acquiring an additional five bighas two cottahs of land at a cost of Rs. 4,381, and supplying such other sums as were required to complete the school and the hospital.

The school is named after Dr. Kenneth MacLeod in recognition of the great interest he took, throughout his service in Veterinary

matters, which is shown by the fact that on his departure from India, he endorsed to Government 5 per cent. Debentures amounting to Rs. 2,500 for the purposes of founding a scholarship called the "Shew Bux Bougla Scholarship" of the value of Rs. 10, now Rs. 11-8 a month, in recognition of that gentleman's liberality in connection with the establishment of the first Veterinary School and Hospital in Bengal.

In the year 1898, the institution was raised to the status of a College. The institution is managed by a Committee.

On the 31st March, 1933 the College had 176 pupils, 112 Hindus, and 30 Mahomedans and the rest from other communities. In the previous year the College had 169 pupils. Out of 175 students who sat for the final examination 125 were successful.

Some seventy years ago Art education was unknown in this country. Only a few stray artists remained in the villages as poor remnants of the glorious bye-gone days. In the year 1854 an Art School was founded by a few wealthy citizens of Calcutta at 365, Upper Chit-pore Road.

**Government
School of
Arts.**

The school was afterwards removed to Colootola Street where now stands the Eye Infirmary of the Medical College Hospital. In 1859 this building was acquired by Government and the school was removed to a house near Sealdah, which being also taken up by Government, the school was removed to 163, Bowbazar Street. Here the Art School remained for twenty nine years from 1864 to 1893.

During the time of Lord Northbrook's administration Art education was seriously taken up by Government. A Committee was formed to consider the question of establishing a Picture Gallery, of taking the existing Art School under direct Government administration and amalgamating the two institutions into one. A number of modern paintings and plaster replicas of antique statuary were brought together as a small beginning for the Art Gallery chiefly for the benefit of Art Students. The Art Gallery was daily visited by a large number of people, and accommodation being found inadequate at the Bowbazar building, Government considered the question of providing

the school with a suitable and permanent house in a suitable locality, and close proximity to the Indian Museum was decided upon. A suitable building was provided and the Art School was transferred to its present situation at 28, Chowringhee Road. On the 31st March 1933 there were 254 students in the various departments of the school.

The subjects in this course are: Drawing from Historical Examples, Still Life, and studies of Plant form, Animal studies, Landscape studies, in pen, wash, and colour, with

Drawing and an ultimate view to Design, as applied to books,
Design course. illumination, labels, lettering, etc.

Life models are arranged for the advanced students of this class. There are regular periods of drawing and painting from Life in pen, wash, and colour, with a view to Figure Designing for illustrations of books. Posters, Advertisements, Wall Painting, etc. are also taught, and lectures on Human Anatomy are delivered at intervals.

Technical Course—Students here undergo a period of practice in Lithography in order that they may be able to reproduce their designs on stone either in monochrome or colour.

EDUCATION IN MUSIC.

The Calcutta School of Music was founded in 1915 and fills an important place in the musical life of the city. It is situated at 43, Park Mansions, Park Street. A considerable number of pupils pass through each year. The subjects are :

Singing, Pianoforte, Violin, Viola, Violincello, Wind Instruments, Chamber Music, Orchestra playing. Theory of music, Harmony and counterpoint.

This is an Association for the cultivation and spread of Indian music on a scientific basis, and was established in 1908 at 74, Dharamtola Street. Its objects are, (1) to spread and improve the cultivation of vocal and instrumental music (Indian) among the cultured people of Bengal, (2) to effect and maintain improvements in

**Sangit-
Sammilani.**

the music schools for girls and boys founded and owned by the *Sangit Sammilani*; (3) to arrange from time to time Soirees and musical entertainments—generally held in March and September; (4) to improve social fellow-feeling by friendly gatherings.

The School organizes two series of concerts at popular prices each year. Of these six Chamber Concerts are held during the monsoon season, and six Symphony Concerts during the winter months.

The Sangit Sangha has now completed the twenty-fifth year of its existence. Founded by the late Sir Asutosh and Lady Pratiba Chaudhuri as the "Ananda Sabha" on the Bengali *Sangit-Sangha*. New Year's Day (the 1st of Baisakh) in 1901, it was ten years later reconstructed by them into a public institution under the name of the "Sangit Sangha" on Rakhi Purnima Day (the 30th of Sravan) in 1911. Sm. Pratiba Devi resolved to remove the barrier of social prejudice which prevented Indian girls from cultivating one of their charming national arts and to take out of degraded professional hands the culture of our national music.

At that time, there were no institutions for the scientific study of the subject. The class of professional musicians to whom the knowledge and study of the art was confined, was rapidly dying out from want of adequate support. Classical Indian music scarcely attracted, and whatever still remained was getting vulgarized. Protiva Devi's anxious desire was to try and preserve what we still possessed, and to revive what had been lost.

Objects.—The objects of the founders of the institution were set forth by them as follows : —

1. To revive, encourage and popularise the various schools of classical Indian music, instrumental as well as vocal.

2. To promote research into, and collect all available materials for a history of Indian music, and to procure all manuscripts and printed books and symbolic pictures dealing with, or in any way treating of Indian music, as also to recover and publish such ancient Indian songs and musical pieces as may be still available.

3. To establish schools for regular instruction in music, or aid in the formation of such schools.
4. To afford opportunities for occasional lectures on music.
5. To adopt a general system of notation adapted to Indian music of all kinds.
6. To award prizes for special skill in vocal and instrumental music.
7. To organise musical entertainments with a view to the gradual development of a taste for the art, and to afford additional means of social recreation.
8. To devise and adopt other means for the encouragement of Indian music in general.

Situation.—The main institution is situated at No. 70, Corporation Street, and there are branches at the Diocesan College, Bethune College, Brahma Girls' School, Boy Scouts' Headquarters and other educational centres.

The Basanti Bidya Bithi, 87, Cornwallis Street, Calcutta, a music schools for ladies in the northern part of Calcutta, was started in 1928 with half-a-dozen girls. The present number of girls is about 150. This Institution is run under the direct supervision of eminent gentlemen and ladies like Sj. Dinendra Nath Tagore, Sreejucta Bina Sen, B.A., B.T., Sreejucta Kamala Tagore, etc. There are various subjects such as music, dancing, domestic arts, hygiene and physical exercise, and they are taught to the girl-students of all ages and castes, with much care and interest by expert and eminent teachers. The various kinds of music such as Classical and Modern Bengali Songs, all kinds of Instrumental Music, and the art of notations are being taught here.

Classes are held every week on Saturdays and Sundays in the afternoon, and the Institution has motor-buses of its own to fetch the students.

SAROJ NALINI DUTT MEMORIAL ASSOCIATION FOR WOMEN'S WORK

The Saroj Nalini Dutt Memorial Association was founded on 23rd February, 1925 to continue the work begun in 1913 and perpetuate the memory of Srimati Saroj Nalini Dutt M. B. E.

Origin. who passed away at the early age of 37 on the 19th January, 1925. Her devoted efforts in organising the women of the country into *Mahila Samitis* (Women's Institutes) for the furtherance of combined work among women for their educational, sanitary and economic progress, was specially valuable and widely appreciated. In order that this noble work inaugurated by her might be carried on and extended, the Association was founded by some of the leading men and women of Bengal.

The Association has a very ambitious scheme—the scheme of complete education and uplift of the mothers of the race so as to make them a strength and inspiration in every sphere of

Object. life. The basic principle of the Association's work is *the organisation of women themselves into groups* for their own emancipation by inducing them to take a definite programme of work towards the attainment of this object. The Association is therefore striving to have *Mahila Samitis* established in every town and every village.

From a very small beginning with 7 or 8 *Mahila Samitis* nine years ago the Association has more than 400 *Mahila Samitis* scattered throughout Bengal and even outside it. The

Its Achievement. Association has aimed at being useful to India as a whole and not merely to one province or any one community or linguistic group. Its helpful guidance has been felt in *the Cochin State, in Ceylon and Burma* where *Mahila Samitis* on the lines recommended by the Association have been and affiliated to it.

The Association maintains a Central Office at Calcutta which controls the whole movement through several departments. The work lies in villages and Publicity Officers are sent out to start new *Samitis* and to popularise the movement. A large Industrial School is maintained in Calcutta for the training of Instructresses for these village

**Work in
Villages.**

Mahila Samitis. These Instructresses are sent to different Samitis to train the village women in domestic and cottage industries. *A monthly journal in Bengali the Bangalakshmi* is published from the Association for spread of education and for dissemination of ideas on women's welfare and progress as well as for co-ordinating the work of Samitis all over the province. Extensive propaganda is carried on in the rural areas of Bengal by our Publicity Officers who in answer to numerous calls from different places organised ladies' meetings for forming Mahila Samitis.

Started in December, 1925, on a small scale with 30 pupils the Saroj Nalini Industrial School for Women has made a valuable contribution to the industrial and cultural education of the adult women of Bengal. It has now grown to be *the biggest Industrial School in Calcutta* with 200 adult women on the roll. About 1,400 women have been under training in this Institution since its inception. Nearly 66% of the women who have passed the final diploma examination of the School have been successful in securing suitable employment and are earning Rs. 30/- to Rs. 80/- per month as teachers of Industrial Schools or pursuing a particular industry. Some of the ex-students have organised new industrial institutions on the lines of the Saroj Nalini Industrial School either in Calcutta or in the mofussil.

**Saroj Nalini
Industrial
School.**

The Association took up the management of the Basanta Kumari Widow's Home at Puri in March, 1930 from late Lady Basanta Kumari Chatterji, wife of the late Sir Pratul Ch. Chatterji. There was practically no pupil in the Home when it was taken over by the Association. At the request of the local public a Middle English School for girls has been attached to the Home and both the officials and non-officials of Puri have evinced a keen interest in the Home and the School. The Asram and the School have become an active centre of education and industrial training.

**Puri Basanta
Kumari Widows'
Home.**

The activities of the different Mahila Samitis are multifarious and

before the advent of these Samitis there was little or no organised social service by women outside the cities. Mahila Samitis have for the first time shown the great value of *organised social service by women* and also have taught the women how to work together. A systematic campaign is being carried on by the Mahila Samitis to familiarise the village women with up-to-date ideas on sanitation, hygiene and public health. They take a prominent part in promoting the health of mothers and children. A few have succeeded in establishing *permanent maternity wards* at their respective places, thereby removing a long-felt want which has been at the root of high mortality among women in lying-in rooms. Among these, the *Saroj Nalini Maternity Ward at Bankura* and *Golokmani Matri Niketan at Barisal* deserve special mention.

30 Dhai (midwife) *training classes* were started in different villages of Bengal under the auspices of the Samitis. About 300 professional midwives as well as ladies of the respectable families were trained in these classes.

Every Mahila Samiti conducts an industrial Class for the teaching of domestic handicrafts to women and arrange for the disposal of products. Some of the Samitis affiliated to this Association have *organised permanent industrial Schools* for women on the line of the Saroj Nalini Industrial School, Calcutta. The Samitis at Senhati and Bagerhat in the district of Khulna are conducting two such industrial schools. Both the schools have been organised by the local District Board and are receiving monthly grants from it.

The Association is also helping the Schools with trained instructresses. The rapid progresses made by the Samitis in teaching different kinds of handicrafts and preparing many useful and beautiful things are visible in many exhibitions held by them at various places.

The Samitis for the first time in the history of the country has chalked out *a practical and widespread system of adult education*. In short the Samitis are trying to make the life of women in the villages

happier, more helpful and more useful than it was 9 years ago and new social life has made its appearance.

The Association has been able to establish cordial links of friendship with women's organisations throughout the world, in England, Scotland, Ireland, Australia, Canada, New Zealand and the United States of America. Regular interchange of published literature and mutual greetings and good wishes were maintained by the Association with women's organisations of different countries during the year of report.

CHAPTER VII

RESEARCH ORGANISATIONS AND LEARNED SOCIETIES.

I. THE RESEARCH ACTIVITIES OF THE UNIVERSITY OF CALCUTTA.

Before the foundation of the teaching departments, both in Science and Arts, in the University of Calcutta, efforts to carry on research work were more or less sporadic. Eminent Professors like Sir J. C. Bose and Sir P. C. Ray were carrying on researches in the respective branches of their studies in the laboratories of the Presidency College, and the Asiatic Society of Bengal was the only Institution which published systematically researches of individual scholars either European or Indian.

The University of Calcutta was the first to give opportunities to the members of its tutorial staff to carry on researches in the Arts and Science subjects. The large resources at her command have enabled her to send out scholars almost every year to different countries in Europe and Asia for special training in various subjects. The University also invited foreign scholars from different countries from time to time not only to deliver lectures on special subjects but also to train research students. These have given an impetus to systematic research work in the University.

During the last twenty years of her activities the University has published a large number of books containing researches in Arts subjects. So far twenty-five volumes of the *Journal of the Department of Letters* containing the results of original researches carried on mostly by the members of the tutorial staff and research students have been published. This Journal though not a periodical has been

published almost at regular intervals. Books containing researches in Ancient Indian History, Epigraphy, Fine Arts, Economics. Anthropology, Pure Mathematics, History both medieval and modern, and in English, literature have been published. Researches in the classical, languages and literature like Pali, Sanskrit and Prakrit, in vernacular literature particularly in Bengali literature both ancient and modern, in philosophy both European and Indian and in comparative philology have been systematically carried on and the large number of publications on these subjects bear testimony to the high quality of those researches. The University is the first to inaugurate Chinese and Tibetan studies in India and the publication of a series of studies under the title *Sino-Indica* is a unique performance. The University while introducing the study of various North-Indian vernaculars in the Post-graduate Department has published selections from the literature in these vernaculars for the first time. *The Calcutta Review* is the monthly organ of the University which not only publishes articles from the pen of the members of the tutorial staff but also informations bearing on the various research activities of the scholars in the University.

A good many members of the staff have by original works of research, established their names in the domain of science, while many others have earned international reputation. The

**Researches in
Science Subjects.**

names of the following, among others, who have done signal service to the cause of higher education by their research work, are worthy to be mentioned in this connection: Sir P. C. Roy, Prof. D. M. Bose, Prof. S. K. Mitra, Prof. P. N. Ghosh, Prof. P. C. Mitter, Prof. J. N. Mukherjee, Prof. N. R. Sen, Prof. H. K. Sen, Mr. P. R. Ray, Dr. B. B. Ray, Dr. P. B. Sircar, Dr. G. S. Bose, Prof. S. P. Agharkarand, H. K. Mookerjee. Among those who were at one time or other connected with this institution mention may be made of Prof. M. N. Saha, Prof. S. N. Bose, Prof. N. M. Basu, Dr. S. K. Banerjee, Prof. J. C. Ghosh and Sir C. V. Raman.

It is not possible to give a list of all the original works of importance done at the University College of Science but it may be

mentioned that the story of the series of brilliant investigations by the members of the staff in the various branches of science begins with the discovery of the famous theory of temperature ionisation by Prof. M. N. Saha. Speaking of this discovery Prof. J. G. Crowther in his book "Short Stories in Science" writes that it is the "first capital discovery by an Indian Physicist in recent years."

For the encouragement of research the University and the different Trusts have created 18 Scholarships of the value of Rs. 75/-, two Fellowship of Rs. 125/- and two of 200/- each p.m. in the departments of Physics, Chemistry and Mathematics. It may not be without interest to give a short account of the different research laboratories.

The action of mercaptans and organic sulphides on metallic salts has been studied in this laboratory, as also the peculiar variability of the valency of gold, platinum and iridium in the case of compleaes formed as a result of the above reactions. Recently serin and thio-auto-acetic ester have been synthesised. At present work is being conducted on the synthesis of (gama)-lactonic acids, thio-camphors and eyelic thio-ketones. A new method for the fluorination of organic compounds has been discovered.

**Palit Research
Laboratory of
Chemistry.**

A large number of investigations has been carried out on the synthesis of a number of natural authraquionone dye stuffs and so far success has been achieved in the cases of aloemodin, rubiadin and munjisthin. In other branches, it has been shown that benzidine rearrangement occurs in the heterocyclic series, while new methods have been discovered for the detection of sugars, phenols and nitrogronps. Studies have been made of the chromone and cumarine condensations.

**Ghose Research
Laboratory of
Chemistry.**

A new method for the synthesis of phenanthrene derivatives has been developed and substances allied to sex hormones in structure

have been synthesised in the *Laboratory of Sir P. C. Ray Research Fellow*.

The work in this laboratory has been directed mainly towards the elucidation of the properties of colloidal systems. Cataphoretic measurements of the charge of colloidal particles have been made and the method extended towards determination of absolute rates of migration of electrolytic ions. Investigations with polar precipitates have been made with reference to the nature of hydrolytic adsorption. The nature of adsorption of electrolytes from aqueous solutions by activated charcoal of different grades of purity has been studied. Experiments with colloidal acids are in progress with a view to correlate their behaviour with the structure of the electrical double layer. With the aid of a grant from the Imperial Council of Agricultural Research investigations are being carried out on the nature of soil colloids.

**Khaira Research
Laboratory of
Chemistry.**

**Palit Research
Laboratory of
Physics.**

Until very recently Sir C. V. Raman was in charge of this laboratory. He carried on his researches partly at this place but mostly at the Indian Association for the Cultivation of Science. His investigations are too well known to need description here.

The work in this laboratory has been mainly devoted to magnetism and in the past very useful work has been done on the magnetic properties of complex co-ordination compounds and of the compounds of the different transition series of elements. At present investigations are being carried out on the gyromagnetic effect in ferromagnetic compounds, the photomagnetic effect in salts of the iron family and on the nature of absorption centres in solutions of paramagnetic compounds, which is being intensively studied. It is to be noted that this is the only laboratory in India possessing a very improved form of Wilson's Cloud Chamber, which is at the present being used for the study of positrons.

**Ghose Research
Laboratory of
Physics.**

This laboratory enjoys the distinction of being the first in India to start researches in the field of wireless. The work carried on here comprises of various branches and technical applications of this subjects. The main line of work has, however, been the investigations of the upper ionised region of the atmosphere—the lonosphere. A course of intensive study and investigations carried out during the last five years, has yielded many interesting and important results on the properties of the ionised region of the atmosphere above this subtropical country.

**Khaira Research
Laboratory of
Physics.**

Members of the staff have made capital contributions to the theory of potential, the theory of elasticity, relativity and Hindu astronomy.

**Department of
Applied
Mathematics.**

Researches are now being carried out in Hydrodynamics, Aerodynamics, Relativity, Astrophysics and the new Quantum Mechanics.

Some of the more important lines of investigation in which the different research laboratories of the department are engaged are:

**Department of
Applied
Chemistry.**

(1) High pressure electrolysis, (2) Cellulose and its decomposition by chemical and bacterial agencies, (3) Commercial utilisation of water hyacinth, (4) alcohol from saw-dust, (5) organometallic derivatives of therapeutical importance, (6) Low temperature carbonisation of coal, (7) Liquefaction of Coal, (8) Investigations on glass (9) Investigation on vegetable and fish oils, (10) Electrolytic preparation of technical products, etc.

The research laboratory can boast as the best equipped in India for the investigation of molecular spectra. Besides spectrographs of high dispersion there is a 6 ft. and a 21 ft. concave grating both in Paschen mounting and a complete equipment for investigations in the infrared. There is further provision for investigations of dielectric properties of liquids, gases and vapours. Quite recently the laboratory is being equipped for investigations on the

**Department of
Applied
Physics.**

rectifying properties of crystals and fine granular masses. The laboratory has upto now published a large number of papers on the band spectra of different molecules and on the dielectric properties of various liquids, gases and vapours.

In the department of physics investigations are being carried out on the effect of chemical binding on the absorption and emission X-ray wavelengths of elements as also on X-ray diffraction.

Research Laboratories of the Lectures.

In the inorganic research laboratory work is being done on problems of valency, magnetic properties of complex compounds, inorganic micro-analysis, general analytical chemistry, chemical analogy and isomorphism, studies in co-ordination compounds and the spectroscopic analysis of rare Indian Minerals and food stuffs.

The Ghose Professor of Botany assisted by the Ghose Research Scholars and members of the Staff have been carrying on researches on the Flora of Nepal, Charophyta of Bengal, Podostemaceae of Assam, the mechanism of the bladders of Utricularia, the origin of the Flora of Bengal and Soil algae from parts of Bengal, the

Department of Botany.

results of which will soon be published. They also investigated some aspects of the biology of the Water-hyacinth, the results of which have already been published. Several papers dealing with the cytology of the crop plants have already been published. At present researches are being carried out on (1) the Cytology of the cultivated varieties of Banana from Bengal, (2) Cytology of the Groundnut, rice and pulses and (3) Physiology of the Rice plant with special reference to its water-requirements.

Department of Zoology.

Main lines of investigation carried on in the Department of Zoology are as follows :—

Vertebrate Embryology—

Development of the vertebral column of vertebrates in general, with particular reference to Urodela, Anura, Lacertilia Ophidia and Chelonia.

Vertebrate Anatomy—

Internal anatomy of common snakes and lizards.

Life-history of the various frogs and toads.

Anatomy of the common toad.

Entomology—

Anatomy of Collembola.

Internal anatomy of the common ants of Bengal with particular reference to digestive and reproductive system.

Systemetic study of ants in connection with the sandal wood investigation of the Forest College.

Respiratory system of the aquatic beetle—*Cybister*.

Life-history, development and anatomy of the pulse beetles.

Protozoology—

Systemetic studies and life-history of Sporozoa.

Studies on parasitic Flagellates.

Seasonal effects on the life-history of Protozoa parasitic on fresh water Mussel.

Numerous original papers have already been published on many of the above mentioned subjects in the Indian, British, Continental and American Journals.

II. INDIAN ASSOCIATION FOR THE CULTIVATION OF SCIENCE.

In December, 1869, the establishment of an Association for the Cultivation of Science by the natives of India was advocated by

Foundation. Dr. Mahendra Lal Sircar, a medical practitioner of Calcutta, in an article in the Calcutta Journal of

Medicine. The proposal was favourably received by the Press and the public and the association was started, mainly through the selfless efforts of Dr. Sircar, in the year 1876 with the avowed object of the Cultivation of Science in all its departments, both with a view to its advancement by original research and to its varied applications to the arts and comforts of life. The present site, cover-

ing an area of 3 bighas and 4 cottas of land, was acquired by the Government of Bengal and made over to the

The Donors. Association in 1876 for a sum of Rs. 30,000/-.

The Foundation Stone of the new buildings was laid by Lord Ripon, the then Viceroy of India, in 1882, and the laboratory built and equipped in 1890. Amongst those whose munificence brought the Association into existence, are

Rai Behari Lal Mitra Bahadur	...	Rs. 100,000
Maharaja of Vizianagram	...	„ 40,000
Mr. Kaly Kissen Tagore	...	„ 33,000
Maharaja of Cooch Behar	...	„ 30,000
Maharani Swarnamoyee	...	„ 8,000
Maharaja of Patiala	...	„ 5,000
Kumar Indra Chandra Singh of		
Paikpara	...	„ 5,000
Raja Kumud Narayan Bhup of		
Bijni	...	„ 5,000
Maharaja of Darbhanga	...	„ 5,000

The projectors wanted to build the association on the lines of the Royal Institution in London and arranged to provide for lectures of a very superior kind in the various branches of the physical sciences, especially in General Physics, Chemistry, Biology and Astronomy, mainly for students who have already passed through School or College or have otherwise attained some degree of proficiency in these respects. There were also lectures for youths and students possessing a lesser degree of proficiency, while youngmen of talent and education were encouraged to prosecute systematically scientific studies after leaving college. Public lectures on different scientific topics were also arranged.

This system of public lectures and lectures to supplement the College courses continued to about the end of the first decade of this century, when gradually more and more stress was

Its Activities. laid on research. Sir C. V. Raman who was till lately Professor of Physics of the Calcutta

University used to conduct all his researches in the laboratories of the Association. The institution is now devoting practically all her resources to research in Physics. Very recently a professorship in Physics after the name of the founder of the Association has been created and a research professor appointed. His chief duty is to devote himself to original research with a view to increase the bounds of human knowledge.

To encourage the work done in the Association the Government of India makes an annual grant of Rs. 20,000/- (subject to a 10% cut). The principal condition of the grant is that the money should be utilised to encourage research students from all parts of India to attend the Association. This has throughout been one of the special features of the work of the Association. Students from Assam, Central Provinces, Bombay, Punjab, Madras, Travancore and Cochin State, Hyderabad State as well as from Bengal carry on research work at this place. Not infrequently research workers from Universities outside Bengal are deputed to work in the Laboratory of the Association.

Along with its report the Association publishes the Indian Journal of Physics which has now acquired an international status and is the recognised organ for the publication of research work done by Physicists from all parts of India.

The Association has a lecture Hall capable of accommodating an audience of 500. The laboratory is housed in a building containing twelve big rooms with an attached well equipped workshop. There is a liquid air plant which enables low temperature investigations to be carried out independently. The laboratory is well equipped for investigations in Raman Effect and Magnetism which are the lines along which researches are being carried on at this place at present.

III. ASIATIC SOCIETY OF BENGAL.

The Asiatic Society in Calcutta, the oldest literary and scientific society in the East (with the exception of the Bataviaasch Genootschap

van Kunsten en Wetenschappen), was founded in 1784 by Sir William Jones. Already a master of several oriental languages on his appointment in 1783 as a Puisne Judge of the Supreme Court, Calcutta, one of his first acts on his arrival was to invite the leading citizens of Calcutta to discuss the formation of a research society, and on the 15th January, 1784, the Asiatic Society came into being, with Sir William Jones as President and Warren Hastings as Patron. Its scope was defined in the President's first address in words which were paraphrased in the first number of its Journal as: "the bounds of its investigations will be the geographical limits of Asia and within these limits its enquiries will be extended to whatever is performed by man or produced by nature."

In its early years, meetings were held in the Grand Jury's room in the Supreme Court. In 1805 Government sanctioned a free grant of the present site at the corner of Park Street and Chowringhee, and a building, designed by Captain Lock of the Bengal Engineers, was completed in 1808, the cost being defrayed by the members. Extensive additions and alterations have since been made, but the main structure remains as it was in 1808.

One of the Society's first activities was the publication of the "Asiatick Researches." Twenty volumes of this serial were published between 1788 and 1836 when, owing to financial difficulties, it ceased to appear. That there was a distinct demand for the work produced, however, is borne out by the fact that more than one "pirated" edition was printed. The proceedings of the Society's monthly meetings appeared in a private journal called "Gleanings in Science." The editors of this monthly obtained the permission of the Society in 1832 to use its name in connection with a new Journal,*

* On the title page it was called "The Journal of the Asiatic Society of Bengal." The Society fitly retained its title of "The Asiatic Society." By the time the Journal became the property of the Society the provincial title had already become familiar. It was incorporated in the code of bye-laws in 1851, and registered in 1876. An effort was made in 1899 to revert to the original name of "The Asiatic Society," but the requisite three-fourths majority was not obtained.

also a private venture. Full control of the Journal was assumed by the Society in 1843. Seventy-four volumes of the "Journal" were published between 1832 and 1904, and 40 volumes of the "Proceedings," started in 1865. In 1905 the two were amalgamated as the "Journal and Proceedings of the Asiatic Society of Bengal, New Series," of which 21 volumes have been issued. Another serial, of quarto size, was started at the same time called the "Memoirs of the Asiatic Society of Bengal," for the publication of larger articles or those requiring more elaborate illustrations. The volumes of this serial, four of which are still in progress, have been published.

One of the most important of the Society's activities is the publication of the *Bibliotheca Indica*, a series of texts in Sanskrit, Persian, Arabic and other languages, frequently also with translations. From 1848 till the present day 1,760 fascicules have been published. Huge works like the Persian Akbar Nama and the Ain-i-Akbari, and the Sanskrit Sahitya-Darpana, have been edited and translated in this series, and many of the most famous oriental scholars have contributed. If one was asked to specify a particular domain in which the publications in this series have been eminently useful, one might mention that of Buddhist Sanskrit literature.

The Society has published from time to time a large number of miscellaneous works such as catalogues and dictionaries. One of the most important in recent years is S. W. Kemp's Catalogue of Scientific Serial Publications in the Principal Libraries of Calcutta.

The Society has succeeded in building up a large manuscript library. Its Persian, Arabic, Turkish, etc., collections run to about 5,000 volumes. These were started by donations and legacies from early members. The transfer, in 1835, of a part of the library of the College of Fort William substantially enriched it. In the early years of this century the enthusiastic activity of Sir E. Denison Ross secured financial assistance from the Government of India for many further acquisitions, and the collection is now one of the largest and most important in the

world. The arduous but all-important task of cataloguing is now nearing completion. The Persian Mss. have all been catalogued and work on the Arabic collection is progressing rapidly.

The Sanskrit manuscript collection is still larger, about 16,000. Special attention may be drawn to the beautiful Buddhist pictures of the tenth century in the *Astasahasrika Prajñāparamita* Ms. and of the seventh century Ms. of the *Kulalikamnaya* in Gupta characters. This collection also owed many of its early acquisitions to the Library of the College of Fort William, and later additions have been mainly due to the enlightened policy of the Governments of India and Bengal. The resources normally used for search and purchase are being used temporarily for cataloguing. Of the monumental catalogue that was being prepared by Haraprasada Shastri, 4 volumes (of 2,850 pages), Buddhistic, Vedic, Smṛti and Historical-Geographical, have already appeared. Others are in active preparation.

The small but picturesque collection of Burmese manuscripts should also be mentioned.

The Society possesses several important manuscript drawings, such as Buchanan Hamilton's famous collection of zoological drawings.

Although not, strictly speaking, manuscripts, the collection of Tibetan xylographs may be mentioned here. They include complete *Bstan-hgyur* and *Bkan-hgyur*.

The Library of printed books is particularly rich in scientific and philological serial publications, including many valuable early sets. Accession lists are published quarterly. A new edition of the Library Catalogue is now in the press.

The Indian Museum owes its existence to the Asiatic Society. In virtue of its renunciation of its claim to accommodation in the Indian Museum building, the Government of India made over to the Society Rs. 1,50,000, which still forms the major portion of its Permanent Reserve Fund.

The Society's rooms are adorned by many works of art. In the centre of the meeting room is a marble bust (by H. Weekes) of the founder, Sir William Jones, and a portrait of him as a boy by Sir Joshua Reynolds. This and many other pictures form part of the Home bequest presented by Brigadier and Colonel Home in memory of their father Robert Home, portrait painter to the king of Oudh, and from 1802 to 1804 Secretary of the Society. The marble busts include two beautiful ones by Sir Francis Chantrey—of W. H. Mill, the author of that remarkable Sanskrit work "Christa-Sangita," and of H. H. Wilson, for many years Secretary of the Society and afterwards first Boden Professor of Sanskrit at Oxford. At the top of the staircase there is a beautiful bronze bust of Csoma de Körös (by B. Holló), the pioneer of Tibetan scholarship and for many years on the Society's staff; facing this is a bronze bust of Sir Asutosh Mookerjee (by H. I. Youngman), who guided the Society's destinies for many years until his death in 1924. On the landing too may be seen a famous edict of Asoka (about B.C. 250) whose characters were deciphered by James Prinsep, for many years Secretary of the Society, and to whose memory the public of Calcutta have erected a magnificent "ghat" near Fort William. A marble bust (by H. Weekes) of this first decipherer of the ancient alphabets of India also adorns the landing.

The Council of the Society meets once a month throughout the year. Ordinary Monthly Meetings are held on the first Monday of every month with the exception of September and October. The Ordinary Annual Meeting takes place in February. Several public lectures are arranged each Winter.

Although the founder of the Asiatic Society in his inaugural address said "... you will investigate ... their skill in surgery and medicine, and their advancement whatever it may be, in anatomy ...," the Asiatick Researches contain little on these subjects. In 1823 the Medical and Physical Society was founded in

Calcutta by John Adam and James Hare and met monthly in the Asiatic Society's Rooms. A portrait of Adam by G. Beechy hangs on the Society's staircase and one of Hare by R. Home in the Eastern bay of its main hall. The Medical Society published its own "Transactions" from 1825-1845. The Medical Section of the Society was not started till 1906, with Lt. Col. F. P. Maynard as its first Secretray. This section generally meets on the second Wednesday of the month. Papers read are usually published in the "Indian Medical Gazette," the Proceedings of the Asiatic Society containing only short abstracts of them. On the formation of the Calcutta School of Tropical Medicine, the Society, realising that its extensive collection of medical periodicals would be more valuable for research purposes in that institution, consented to their transfer.

The Society fostered the formation of the Indian Science Congress, which held its first session in the Society's rooms in 1914. The Asiatic Society is responsible for the management of the work of the Congress when not in session, and publishes its "Proceedings."

IV. THE BANGIYA SAHITYA PARISHAD.

The Bangiya Sahitya Parishad was established on the 29th April, 1894, when about thirty gentlemen, who used to meet at the residence of the late Raja Benoy Krishna Deb of Sobhabazar to discuss topics bearing on Bengali literature, re-constituted themselves on a wider basis into the present Society, under the presidency of the late Mr. R. C. Dutt, I.C.S., C.I.E., with a definite programme for the cultivation and improvement of the Bengali language and literature. During the first six years its meetings were held at the house of Raja Benoy Krishna. The Parishad was then, for a time, removed to a small building in Cornwallis Street rented for the purpose. The present building, built on a plot of land, a munificent gift from the Maharaja Sir Manindra Chandra Nandy of Cossimbazar, was completed and formally occupied by the Prishad in 1908.

During the thirty-two years of its existence the Sahitya Parishad has developed along a certain definite line of growth, and has grown into a Society with a four-fold character. *Firstly*, it is a Society which has not only the study and development of the Bengali Language and literature for its main object but which also encourages and includes historical, archæological, sociological, and other scientific studies and researches with special reference to this province within the scope of its investigation. To carry out these objects, it at present undertakes to publish useful original books and translations from the best books in the Sanskrit, Arabic, English or other European languages; and to help meritorious writers; and it watches with interest the educational policy of the Government and the Calcutta University as far as it affects the cause of the Bengali language and literature. *Secondly*, it seeks to collect and preserve old Bengali manuscripts and objects of historical, archæological, ethnological, literary and scientific interest. *Thirdly*, it tends to foster the general spirit of research among the literary, scientific, historical and philosophical students of Bengal, and publishes the results of their researches through the medium of the Bengali language. *Fourthly*, it affords a meeting ground for its members and other distinguished men for mutual intercourse, and exchange of views on matters of literary and scientific interest.

Ordinarily, the Parishad holds one General Meeting in every Bengali month, when papers previously approved by the Council are read and the reading is usually followed by discussions. The exhibition of objects of literary, historical and scientific interest always forms an interesting feature at these meetings. Besides these meetings special sittings are held for courses of lectures by well-known writers.

The Parishad issues a quarterly journal—the Sahitya Parishad Patrika—which is supplied free of charge to all members and at Rs. 3/- for each annual volume to others. A high standard of research and scholarship is maintained in the selection of articles for the Journal. The Editor is helped by a Publication Committee.

The Library of the Parishad is rightly reckoned as a unique one in the entire province of Bengal, its aim being a complete collection of Bengali works, ancient and modern. At the end of the last official year, the Library contained more than 50,000 volumes and about 5,000 manuscripts.

**Library and
Reading Room.**

It is a matter of satisfaction that several public and private Libraries have been incorporated in that of the Parishad, the chief of which are :—

- (1) The Library of Babu Sukumar Haldar.
- (2) The Library of the Bandhab Society.
- (3) The Library of the late Babu Kailash Chandra Sinha.
- (4) The Tibetan Buddhist literature—the Bstan-hgyur and Bkash-hgyur Kanjur consisting of 1,000 volumes of block-print books in pothishape.
- (5) The Library of the late Pandit Isvar Chandra Vidyasagar.
- (6) The Library of the late Babu Satyendra Nath Dutt, the poet.
- (7) The Library of the late Mr. Ramesh Chandra Dutt, C.I.E., the First President of the Parishad.
- (8) The Library of the Sahitya Sabha.
- (9) The Library of the late Jnan Chandra Chaudhury.

As already mentioned, the Parishad has been receiving an annual grant from the Corporation of Calcutta for its library.

The Reading Room is open to the public. All the Mofussil and Calcutta papers published in Bengali and a few English papers are laid on the table.

The rescue and preservation of the old literature of Bengal, invaluable, apart from literary considerations, for the solution of many historical and philosophical problems, is one of the primary objects of the Parishad. The Library of the Parishad as it stands at present is the best and richest collection of Bengali Manuscripts in the Province.

**Collection and
Preservation
of Mss.**

The Parishad not only undertakes the collection and preservation of ancient MSS. but also the publication of the most important of these in separate volumes with introduction and

Publications. notes by well-known scholars. Several of these publications are unique as regards their script, language and contents. From the list of the books which have already appeared—they number 73, several of them running to more than one volume—it will be clear that besides scholarly works, the Parishad encourages publication of useful literature in all the different branches of knowledge.

The Parishad has been extremely fortunate in procuring a variety of exhibits chiefly of historical and archæological interest, and thus it has in its possession a very promising nucleus

Museum. of a Museum chiefly provincial in character, and in a way supplementary to the Indian Museum of Calcutta. Its collection comprises images of the Gandhara, Kushan, Magadha and Bengal Schools. Besides a large number of these images of metal as well as stone, there is a rich collection of rare old coins in its Cabinet. Some of these specimens are quite unique, and among these may be mentioned three bronze images which were described by the renowned Art critic, Mr. William Rothenstein—a former President of the Indian Society of London,—as “impossible to match.” There is a collection of the personal relics of the distinguished literary luminaries of the Province. The *pugree* or head-dress, and the plaster cast of the head of Raja Rammohan Roy are interesting. The Parishad may also veritably be called a National Portrait Gallery, owing to its possession of a very large number of portraits of the distinguished sons of Bengal.

The compilation of a comprehensive etymological dictionary of the Bengali language is a huge task appropriately taken up by the Parishad. The Parishad is in possession of a

An Etymological Dictionary. number of collections of words by various hands, chief among which is that of Pandit Isvar Chandra Vidyasagar, consisting of over 7,000 words. The

“Sabdakosha” of Rai Bahadur Jogesh Chandra Vidyanidhi, which is a publication of the Parishad, is the first attempt on scientific lines.

The Parishad has worked on removing the absence of suitable scientific and technical words in the Bengali language. Fairly complete lists of scientific terms in the different branches of Mathematics, Astronomy, Chemistry, Geography, Biology, Medicine and Mineralogy have been published in the Journal.

Translation of Scientific Words.

The Parishad suffers from the want of sufficient accommodation in housing the daily growing collection of books, old manuscripts and exhibits for the museum. To remedy this, it was decided to erect a hall which is to be named *Ramesh Bhaban* for perpetuating the memory of the late Mr. R. C. Dutt, the first President of the Parishad. The plot of land on which it is built was the free gift of Maharaja Sir Manindra Chandra Nandy Bahadur. The groundfloor is complete.

R. C. Dutt Memorial Hall.

In order to extend the scope of its activities, and to instil into students who are not resident of Calcutta spirit of research and intellectual activity, the Parishad has affiliated a number of branches in different parts of the country, *e.g.* at Rangpur, Murshidabad, Rajshahi, Bhagalpur, Burdwan, Gauhati, Chittagong, Dacca, Barisal, Bankura, Krishnagore, Kalna, Benares, and Delhi.

Branches.

(1) The Parishad has always moved for better recognition for the Bengali language in the educational policy of both the Government and the University. As a result of these activities the Government of Bengal as well as that of India recognised the importance of the vernacular up to some stage of instruction. As early as 1896, the Parishad fought for a place for the vernacular in the University examinations with some success. The Parishad now records with great satisfaction that

Other Activities.

considerable changes have been introduced in the University curriculum in the matter of the vernaculars almost on the lines suggested by the Parishad in 1896.

(2) The Parishad has been entrusted with the task of perpetuating the memory of the renowned literary men of the province, for which there are separate funds raised by public subscription.

(3) There is a Fund for helping the deserving literary men who are in straitened circumstances.

V. THE BOSE RESEARCH INSTITUTE.

The Bose Research Institute at Calcutta was founded and built by Sir J. C. Bose as a place where he and his successors might carry out researches on the phenomenon of life, and its various manifestations. It was publicly inaugurated on November 30, 1917, and has been in active operation ever since. It is a handsome building in Indian style, and has a large auditorium capable of accommodating 1,500 persons, the acoustics of the Hall being almost perfect. No elementary teaching is undertaken; the only object is post-graduate research. Carefully selected scholars are admitted on condition that they devote themselves wholly to the prosecution of research, not for the satisfaction of personal ambition, but in the words of the founder, "in order to realise an inner call to devote one's whole life to win knowledge for its own sake and to see Truth face to face."

Recent investigations carried out at the Institute establish the important generalisation of the fundamental unity of plant and animal life. Investigations on the physiological mechanism of simple vegetable life, has led to the better understanding of the more complex mechanism of animal life. The conducting tissue in the stem and leaf was located by the *Electric Probe*. The physiological nature of the conduction is established by the observation that, both in the plant and in the animal nerve, conduction is affected by changes of temperature, by blocking and stimulating agents, which could not

have any such effect upon it were it merely mechanical. In this simple 'nervous system' there is no central organs such as brain; only nerves of which some have been shown to be sensory, others to be motor. The "Circulatory system" consists entirely of strands of propulsive cells distributed throughout the plant, representing a contractile arterial system.

This advance of knowledge has been rendered possible by the invention and construction at the Institute of numerous automatic recorders of high sensitivity and precision. Besides the *Electric Probe*, the *Resonant Recorder* registers times as brief as a thousandth part of a second, enabling the most accurate determination of velocity of nervous impulse in plants to be made. The *Photosynthetic Recorder* automatically inscribes on a revolving drum the carbon assimilation in plants and exhibits the extraordinarily great increase in its power of assimilation produced by infinitesimal traces of certain chemical substances. The *Magnetic Crescograph* enables movements, which are beyond the highest powers of the microscope, to be detected and recorded. The magnification produced can be carried to fifty million times. The imperceptible rate of growth and its induced variations under chemical or electric stimulants can be instantly measured.

The specific action of a drug can be immediately detected by its action on the pulse-beat of plant and animal. The pulsating organ of the plant was first subjected to the action of the drug; parallel experiments on the animal heart gave results which are extra-ordinarily similar. The recently invented *Resonant Cardiograph* inscribes the different phases of the heart-beat with unprecedented accuracy, the successive dots in the record measuring time as short as a hundredth part of a second. A very extensive field of investigation has been opened out on the action of extracts from various plants, the medicinal properties of which had not hitherto been suspected. By the employment of some of these the heart-machine can be regulated, enhancing or lowering its activity.

A complete account of these investigations will be found in various books published by Messrs. Longman Green & Co.

VI. ALIPORE OBSERVATORY.

Seasonal weather with its variations has always been an important factor in India. From the earliest times of British interest in this country more or less desultory observations were taken at the instance of various officers scattered in different parts of the country. Observations before 1865 have mostly been found to be of little value.

In Calcutta, at the Survey Office in Park Street, systematic observations commenced in 1853. This observatory used also to give time-signals to shipping in the port. Interest in the meteorology of India in general, and of Bengal in particular, received an impetus after the great cyclone that visited Calcutta in October, 1864. It was accompanied by a storm wave up the Hooghly. Over 80,000 human beings were drowned or died of exposure, and a great part of the shipping on the river was wrecked. As a result of the awakening of interest in weather phenomena, five provincial systems of observations were evolved during the period 1865-1874. The one for Bengal came into being in 1867, under the Reportership of Mr. H. H. Blandford, who was then Professor of Science in the Presidency College and one of the Honorary Secretaries of the Asiatic Society of Bengal.

About 1874, on the recommendation of the English Meteorological Council a re-organisation of the observational work in India was contemplated by Government, and Mr. Blandford was appointed the Imperial Reporter. He drew up a scheme for an All-India service, which was launched in 1875. The Alipore Observatory was established as one of the initial items of this scheme. The objects of the Observatory were manifold. Some of them were:—Recording of observations of various meteorological elements, maintaining autographic instruments also for this purpose; providing a central depot for verification of instruments for other observatories, and a training ground for observers. Experimental observations and special investigations were also part of the Observatory's programme of pioneer work, which commenced in 1877, just half a century ago. With the initiation of this institution, observations at the Survey Office were

stopped. A little later when Alipore had its equipment for time determination, the function of dropping the Time-Ball on the Semaphore Tower of Fort William was also taken over from the Survey Office.

Another important project in Mr. Blandford's programme was the inauguration of Daily Weather Reports. The first to begin was one in Calcutta in 1877. Observational data were collected by post, and charts were prepared at the central office. The droughts and famines of 1876 and 1877 made Government anxious for quicker weather information. An advance in this direction was made in 1878 when observations began to be telegraphed in code to weather report headquarters. In addition to the new Imperial organisation of Mr. Blandford, there were also the original Provincial organisation which were working. Among these continued the one for Bengal with the functions of issuing weather reports and managing the gradually expanding storm-signal service. This service, which commenced about 1875 with a nucleus of 5 observatories round the Bay, was substantially augmented and re-organised in 1880. Subsequently, from time to time, improvements were introduced, until, finally, the advent of wireless telegraphy ushered in an era of increasing usefulness to the shipping world.

Thus in Calcutta there were in the late eighties of the last century side by side, firstly, the Imperial section of meteorological work, gravitating round the Alipore Observatory and, secondly, the offices of the Bengal Meteorological Reporter. Sir John Eliot succeeded Mr. Blandford in 1889, and immediately proceeded to consolidate the results of the pioneer work of his predecessor. He handed over the charge of the Alipore Observatory to Mr. Little, whom he appointed as "Second Assistant Meteorological Reporter to the Government of India." The same year the Calcutta branch of the India Meteorological Office and the Bengal Meteorological Office were combined. This combined office served as the principal office of the department, until the Simla branch gradually grew up and assumed supreme position about 1905. In 1904 Sir Gilbert Walker had succeeded Sir John Eliot as the Director-

General of Observatories in Simla. In Calcutta there was the Meteorological Reporter to the Government of Bengal responsible for the local weather report and the storm signal service for the Bay of Bengal. There was also the Second Assistant Meteorological Reporter of the central service in charge of the Alipore Observatory. Sir Gilbert amalgamated these two offices and appointed Professor Peake of the Presidency College to this new post of "Meteorologist, Calcutta." Until as recently as 1926, the tradition of the Professor of Physics, Presidency College, holding the part-time post of "Meteorologist, Calcutta" still held good.

In 1922 the Storm Warning duties for the Bay of Bengal were taken over by Simla headquarters from Alipore. Subsequently however, the Government of India decided to re-transfer the Storm Warning service to Calcutta under a wholetime Meteorologist. This decision was given effect to in April, 1926.

The principal activities of the Alipore Observatory and Office at present are :—the maintenance of a series of observations by eye readings and by autographic instruments registering pressure, temperature, wind, humidity, etc.; recording earthquakes by a seismograph; supplying tested instruments to all other Observatories of the department; collecting weather logs of steamers arriving at Calcutta for the study of marine meteorology, publication of the Daily Weather Report for North-East India, supplying time-signals to the Port of Calcutta by dropping Time-balls, and transmitting time-signals by wireless according to the International system twice a day; sending warnings about storms or anticipated heavy rain to a number of railway, public works, police, irrigation and other classes of officers: and, most important of all, the issue of Weather Bulletins and storm warnings by priority telegrams to ports round the Bay of Bengal, and to ships at sea by wireless broadcasts, which are issued at least twice daily, but which, it occasion demands it, are increased to as many as six times during the day and night.

VII. LEARNED SOCIETIES.

The Calcutta Mathematical Society was founded in 1908, by a number of prominent mathematicians with Sir Asutosh Mookerjee at their head, with the avowed object of promoting mathematical research and establishing at Calcutta a centre at which all desirous of extending the bounds of mathematical knowledge could meet and have the merits of their contributions adjudicated upon by an indigenous tribunal working independently of an institution in India or outside India. In 1908 there was no other institution in India of the type of the Calcutta Mathematical Society; the Society first came into being as the Indian Mathematical Club, in 1907, but it did not publish its journal before 1909; also for some years in the beginning original work did not appear in that journal which contained short notes of an elementary character, problems and their solutions.

The Calcutta Mathematical Society has flourished so well that Sir Joseph Larmor could call it in 1928 one of the great sources of mathematical knowledge in the world. It has published 25 volumes of its journal, called the *Bulletin of the Calcutta Mathematical Society*, including special volume, published as Vol. 20 of the *Bulletin* to commemorate the 20th year of the Society's existence. That volume contains contributions from many of the greatest mathematical leaders from all over the world, including Sir Joseph Larmor, Sir Horace Lamb, Sir F. W. Dyson, Professors Hardy and Littlewood (Cambridge), Whittaker (Edinburgh), Forsyth (London), Tonelli (Pisa), Bichsack (Berlin), Salkowski (Charlottenberg), Sierpinski (Warsaw), Fejer (Budapest), Riesz (Szeged), Takagi (Tokio), Hayashi (Sendai) and Hedrick (Los Angeles).

The numerous articles published in the *Bulletin* by Indian mathematicians have been quoted in the *Encyklopaedie der mathematischen Wissenschaften* and in many standard treatises.

The President of the Society is Dr. Ganesh Prasad, Hardinge Professor of Higher Mathematics. There are 30 honorary members,

among whom are most of the greatest mathematicians of the world. The ordinary members are 136 mathematicians from all the parts of India.

Indian Statistical Institute was founded in 1931 to "promote the study of Statistics, both pure and applied, and allied subjects." The head quarters are in the Statistical Laboratory, Presidency College, Calcutta with Sir R. N. Mookerjee, K.C.I.E., K.C.V.O., as Chairman. There are three branches, at Bombay, Poona and Mysore, Prof. Karl Pearson of London and Prof. Corrado Gini of Rome are Honorary Fellows of the Institute. There are two Honorary Members, the Hon'ble Sir James Grigg, K.C.B. and Sir B. N. Seal, M.A., Ph.D., D.Sc. Among the Vice Presidents and members of the Council are eminent educationists, businessmen and officials from different parts of India. The Institute is affiliated with the Royal Statistical Society of London as a corporate member. There is a Technical Committee, a small expert body, which is responsible for special investigations and technical problems. Colloquiums and discussion meetings are regularly held on Fridays or Saturdays in the Calcutta centre, and occasionally in Poona and other centres. These are generally concerned with matters of technical research. When the subject is of wider interest, public meetings are held. The work of the Institute has been appreciated both in India and abroad.

Members may borrow books and periodicals from the library maintained by the Institute and by the Statistical Laboratory and also avail themselves of certain facilities afforded by the Laboratory, which is fully equipped with up to date calculating machines (Brunsviga, Dalton and Mercedes) as well as a Gestetner machine for duplicating suitable forms, worksheets etc. Sampling and other statistical experiments are carried on in the Laboratory with the help of trained and qualified computers. Tables and other aids for calculation are also available. A research grant is received from the Imperial Council of Agricultural Research for investigation of Statistical problems connected with agriculture and for advising and training agricultural officers. Grants are also received from some Provincial

Governments from time to time. For instance, the Bengal Government sanctioned a small grant several years ago for studying the Statistics of the North Bengal Flood. A similar grant was received from the Bihar Government for analysing the data relating to rainfall and floods in Orissa. The Bengal Board of Economic Inquiry are at present having some of their data analysed in the Laboratory.

The membership of the Institute carries the right to receive a free copy of *Sankhyā* : Indian Journal of Statistics. The first volume has just been completed consisting of nearly 500 large quarto pages divided into four parts issued during a year. This has been very well received by all Statistical and Economic Journals throughout the world, some of them, such as the *Journal of the Royal Statistical Society* referring to it at length editorially, instead of mentioning it among reviews in the usual way. Foreign statisticians of repute, such as Prof. F. Zahn, President of the International Statistical Institute and Prof. C. Gini, formerly Head of the Department of Statistics, Italy, have contributed articles to *Sankhyā*. Statistics have been interpreted very widely so as to include all problems, whether agricultural or anthropometrical or economic or educational or medical, lending themselves to objective treatment with the help of figures. Articles on theoretical Statistics, Tables for computation etc., are also published. Of wider and more immediate interest is the Bibliography Section, giving comprehensive abstracts of current Indian official statistical publications properly classified according to the subject, indexes and abstracts of articles in the periodicals received by the Indian Statistical Institute and by the Statistical Laboratory, nearly 700 in number, and reviews of books and monographs received from all countries of the world.

Though the necessity for the establishment of an association solely devoted to the cause of physics has been felt for a long time nothing material was done till a number of physicists from different parts of India joined together and founded the Indian Physical Society, which was registered under Act XXI of 1860 on the 29th June, 1934.

3. The Indian Physical Society. The objects of the Society are :

The Aims and Objects. (1) To promote the progress and uphold the cause of Physical Science, both in pure and applied branches in India.

(2) To encourage and publish important researches in Physics and other associated branches of knowledge, e.g., Astronomy, Geophysics, Meteorology, etc.

(3) To publish books, journals, proceedings and transactions relating to original researches in pure and applied physics and other associate sciences.

(4) To organise meetings and conferences for reading and discussing papers submitted to the Society, advising Government and other bodies on matters affecting the physical sciences and to co-operate with the National Research Council when instituted in all matters of national importance.

(5) To secure and administer funds, grants and endowments for furtherance of scientific research.

(6) To undertake and execute all other acts which shall assist in and promote the usefulness, aims and purposes of the Society.

The administration, direction and management of the affairs of the Society is entrusted to a Council composed of the President, two Vice-Presidents, a Treasurer, a Secretary and six other members of the Society.

The Inaugural Meeting was held on the 29th and 30th September, 1934, in the Hall of the Indian Association for the Cultivation of Science at Bowbazar, and twenty papers contributed from different research centres in India were read on the occasion. The Society has during the short period of hardly five months of her life, been able to enroll as fellows eighty physicists from all parts of India, while many more have promised active co-operation and sympathy. The temporary head-quarters of the Society have been located at the University College of Science, 92, Upper Circular Road, Calcutta and the President for

the year is Mr. B. M. Sen, M.A. (Cantab.), I.E.S., Principal, Presidency College, Calcutta.

The Indian Chemical Society came into existence in 1924 as a result of several meetings held during the Science Congress weeks from 1922-24, due chiefly to the efforts of Sir P. C. Ray, late Dr. E. R. Watson, Dr. J. N. Mukherjee, Dr. J. C. Ghosh and Dr. S. S. Bhatnagar and several other leading chemists of India. The Annual General Meeting of the Society is held in conjunction with the annual sitting of the Indian Science Congress. It has thus been possible to establish personal contact among its Fellows scattered all over India.

4. The Indian Chemical Society.

The Society was registered as a learned Society on the 9th of May 1924, with Sir P. C. Ray as first President, Dr. G. J. Fowler and Dr. J. L. Simonsen as first Vice-Presidents, late Dr. E. R. Watson and Dr. N. R. Dhar as first Hony. Editors, and Dr. J. N. Mukherjee and Dr. P. C. Mitter as Hony. Secretary and Hony. Treasurer.

The object of the Society is to cultivate and promote the cause of chemical science and allied branches of learning by holding meetings to read and discuss papers of scientific interest, by arranging lectures on broad scientific topics, by co-operating with other organisations having similar objects, specially by publishing original memoirs in chemistry and allied branches of science through the medium of the Society's organ.

Aims and Objects.

The administration of the affairs of the Society is entrusted to the Council consisting of President, Vice-Presidents, Hony. Secretary, Hony. Treasurer and Hony. Editors and twenty ordinary members of the Council elected by votes from among the Fellows by ballot, after the expiry of the terms of office of the respective office-bearers and members.

Administration.

During the first four years of its existence (1924-27) four issues were published annually. During 1928-29, six issues were published.

Publication. The publication of the number of issues was increased to ten from 1930. Since 1934 the Society publishes twelve issues, each issue appearing at the last date of the month. The adjudication of the publishable matter is entrusted to a Publication Committee consisting of ten members elected annually.

The Society has built up a fairly comprehensive reference library consisting of valuable Journals of chemical and allied branches of science and dissertation on scientific subjects received
Library. in exchange for its own Journal. There are nearly 700 bound volumes of Journals dealing with the chemical and allied science and more than 1000 dissertations. The Society is in terms of exchange with more than 120 scientific publications.

In 1929 the Society awarded Research grants amounting Rs. 500/- to research workers in India but due to the financial stringency the practice has been discontinued. In order to commemorate the 70th Birthday of Sir P. C. Ray, the
Awards. Society has been in a position due to the munificence of Prof. S. S. Bhatnagar, to award a gold medal since 1933 to the best research worker among the junior chemists of India. In memory of late Mr. J. M. Das Gupta, a Fellow of the Society, the award of a second gold medal has been arranged for since 1934 through the generosity of Mr. S. M. Das Gupta, the brother of the late lamented Fellow.

Dr. N. R. Dhar is at present the President of the Society.

Indian Psychological Association was started as early as 1925 through the efforts of the members of the Calcutta University staff in the Department of Experimental Psychology. It was in 1914 that the late Sir Asutosh Mukherji first introduced Experimental Psychology in the B.Sc. and M.Sc. examinations of the Calcutta University.
5. Indian Psychological Association. The first laboratory in India was started in 1916 and was located in the

University College of Science. Two All-India organisations—the Indian Psychoanalytical Society and the Indian Psychological Association came into being in 1922 and 1925 respectively. The latter has as its organ the *Indian Journal of Psychology* almost entirely maintained by the University has entered the 9th year of its life. This Journal, the only one of its kind in India, has been recognised by its elder and maturer sisters abroad. The Association has about 100 members and its present President is Lt. Col. O. Berkeley Hill.

The Psychoanalytical Society which is affiliated to the International Psychoanalytical Association was founded by Dr. G. Bose, M.B., D.Sc., who is actually at the head of Department of Experimental Psychology at the University of Calcutta. The Society has been responsible for slowly disseminating the basic unconscious principles guiding human thought and action and the curative technique of modern Psychology amongst mental sufferers and medical practitioners and the lay public. A Psychological clinic in the Carmichael Medical College was started by Dr. G. Bose sometime ago.

The Society was founded under the auspices of the Anthropology Department of the Calcutta University as early as 1920. It was originally called the Anthropology Club but with the progress of research works carried on by the members of the Department it gradually assumed the form of a Research Society. The members of the Society meet off and on to discuss matters relating to Anthropological research, to read papers and communicate the results of their investigations. It has extended its hearty co-operation to foreign scholars who had been to Calcutta from time to time notably among them being Prof. E. Von Eichstedt, Dr. E. S. C. Handy, Prof. C. Tanber of Munich, Dr. Boulnois, Dr. Meinhard of Ethnographical Museum, Berlin. The Society has recently announced

a Giuffrida-Ruggeri Medal for the best field work in India by a foreign scholar or outside India by an Indian scholar. The researches carried by the members of the Society have been published either in the form of books, Bulletins or papers from time to time.

This society was founded in the year 1922 by the members of the staff and students of the Botany, Zoology, Geology, Anthropology Departments of the University of Calcutta. The aims and objects of the society are to promote and encourage the study of the flora, fauna, geology, anthropology of the province of Bengal. The periodical meetings of the society are held in the premises of the Biological Laboratories at 35, Ballygunge Circular Road, Calcutta, when papers on different Natural History subjects are read and discussed. Membership of the society is open to all persons interested in Natural History.

**7. Calcutta
Natural History
Society.**

**8. The Geolo-
gical, Mining and
Metallurgical
Society of
India.**

The Society was started in 1924 with the following objects:—(i) To promote and encourage the study of Geology, Mining and Metallurgy and to facilitate the meeting of persons engaged in the pursuit of Geology, Mining and Metallurgy in India.

(ii) To collect, publish and to distribute information relating to Geology, Mining and Metallurgy and the establishment and development of Indian concerns connected therewith.

(iii) To protect the interests of persons interested in Geology, Mining and Metallurgy, pure and applied in India.

The office of the Society is located in the Geology Department, Presidency College, Calcutta. Under the auspices of the Society monthly meetings are held for reading and discussion of original papers on Geology, Mining and Metallurgy. Excursions to various places of scientific and technical importance are occasionally arranged for the benefit of the members of the Society.

The Society has its *Quarterly Journal* printed at the Calcutta University Press and published at regular intervals. Only original papers dealing with Geology, Mining and Metallurgy find place in the Journal. The Journal is widely circulated and is sent to all the important learned societies of the World.

The Journal of the Society.

A society called the Physiological Society of India has been recently started through the efforts of a number of research workers of the Presidency College for higher research in Physiology. The president of the Society is Professor S. C. Mohalanobis. The aims and objects of the Society are stated to be as follows :

9. The Physiological Society of India.

- (i) to promote and organise physiological and bio-chemical studies and researches in India ;
- (ii) to facilitate the intercourse of physiologists Bio-chemists, medical men, Bacteriologists, Pathologists and other persons interested in the advancement of Physiology and Bio-chemistry.
- (iii) to disseminate modern physiological and bio-chemical contributions.
- (iv) to create an interest in Physiology, Bio-chemistry and metrilional problems by publishing pamphlets or otherwise.
- (v) to arrange for the publication of an Indian Journal of Physiology and Bio-chemistry.

The office of the Society is at present located in the Physiological Laboratory of the Presidency College.

The Institutions of Chemists (India) was founded in 1927 with Mr. R. L. Jenks, F.I.C. the then Chemical Examiner for Customs and Excise, Calcutta, as President with 50 foundation members representing the various chemical profession. The object of the Institution is mainly to foster technical researches by holding regular meet-

10. The Institution of Chemists.

ings and publishing Proceedings of the same under an Editorial Board. Besides, excursion to Industrial centres, consideration of all matters relating to standardisation of methods or processes etc. come within the scope of the Institution. Medals are awarded to distinguished workers for work on particular subjects notified in the Papers before hand. Members are also helped with informations regarding appointments, promotions etc. wherever possible. The present President of the Association is Dr. E. Spencer D.Sc., F.I.C. etc., Head of the Chemical Department, Messrs Bird & Co., Calcutta. The office of the Institution is located in the Custom House, Calcutta.

On July 6th, 1934, the Biochemical Society, Calcutta, was inaugurated for the furtherance of biochemical studies and research in India. The Society holds monthly meetings for biochemical discussions, reading of original papers, reviews etc., and, in general, provides a meeting ground for people interested in the advancement of Biochemistry in India. In several meetings already held, papers on varied subjects—vitamins, enzymes, snake venoms, bacterial growth etc.—have been read and discussed. The office of this Society is at present located P/109, Lake Road, Calcutta.

Indian Radiological Association has been started with the following ideas. Whereas the use of the Roentgen Rays and electricity in medicine has made much rapid progress in recent years and whereas the interest of the medical men who have specialised in these method of treatments and those of the lay public who take advantages of such treatment, should be safeguarded and protected, it is considered desirable to form an association of those engaged and interested in such subjects.

Members are enroled from amongst : (a) Medical Radiologists and other medical and dental practitioners. (b) Physicists. (c) Engineers and Manufacturers. (d) Radiographers. (e) Others interested in X' Rays, Radio-activity and physiotherapy and allied subjects.

The object of the Association shall be to promote the advancement and study of Radiology, Radio activity, Radium therapy, Physiotherapy and allied subjects of India; and to take whatever steps may be deemed necessary to this end, such as encouraging discussion of Radiological problems, promotion and maintenance of centres of research and teaching, co-operation with workers in these subjects both in India and abroad.

The transaction of the Association would be published at first in one or more of the reputable journals of the country and later on, when circumstances permit in its own journal. The inaugural meeting was convened on 2nd February, 1931, at Chittaranjan Seva Sadan.

13. Agri-Horticultural Society of India.

Rev. William Carey, the celebrated Baptist Missionary, the Centenary of whose death is being celebrated this year, was the founder of the Society.

At a Public Meeting held in the Town Hall on the 14th September 1820 Rev. Carey put forward his suggestions and based on his Prospectus the Society came into being. His ideal has been followed up all these years though the Society no longer carries out any Agricultural work.

A sentence from the Prospectus reads "a body of men engaged in the same pursuit, form a joint stock of their information and experience and thereby put every individual in possession of the sum total acquired by them all". It was one of the first aims of the Society to discover conditions existing all over the country and a questionnaire was issued calling for variation of climate, type of soil, crops grown, etc. Replies were published in the Transactions and Journal. Then an attempt was made to improve the crops, indigenous fruits, vegetables etc., and in 1822 premiums were offered for improved kinds of fruit and vegetables while in 1826 a sum of Rs. 500/- was sanctioned for imported vegetable seed for free distribution among Calcutta and Patna growers. This seed came to the Society from Cape

Its earlier History.

Colony, Australia, and Europe and results were satisfactory. Exhibitions were annually held and we read in 1840 that the produce exhibited by Calcutta growers compared favourably with similar products offered in Covent Garden. Peas it appears deteriorated very quickly for in 1885 one thousand pounds of a superior variety was imported for free distribution. I might add that in 1827 premiums were offered for essays on various agricultural subjects and in 1838 Rs. 1,000/- was set aside for procuring seed of every kind of Cotton procurable from South America, the West Coast of Africa, China and Manilla.

Seven years after the founding of the Society a piece of land was obtained in Alipore at the head of Budge Budge Road which was converted into a nursery for grafting and propagating various fruit trees while experiments in Tobacco, Cotton and Sugarcane were carried out at Akra where a plot of land, 500 biggahs in extent, had been acquired. For various reasons these plots were abandoned after a few years but in 1836 six biggahs were obtained in Sibpur near the Botanical gardens chiefly for Sugarcane which was being largely imported from Mauritius. This Sibpur garden was gradually increased till it could contain an Orchard and flower garden and in 1844 a further 25 biggahs was obtained. In the year 1866 Government wished to increase the area of the Botanical gardens and the Society was without a garden till 1879 when the present site in Alipore, only 64 biggahs in extent, was taken over.

In the early years of its existence the Society did practically all the work of the Government Agricultural Department, experiments were carried out by its members in the cultivation of cereals, fire, dye, silk etc., and a reference to the Dictionary of Economic Products of India will show those abbreviations which evidence the value of the Society's work. Branch Societies sprang up in various cities and though many failed to keep alive after the retirement of some keen workers a few have given rise to Horticultural Societies and Government Gardens.

When the Government relieved the Society of all Agricultural work in 1900 more time was given to fruit and flowering plants and consignments from abroad were of frequent occurrence. After acclimatisation and propagation the stock was distributed to members.

Though originally of quasi-government form, the Society, it should be understood, is supported by members who in exchange for a subscription receive certain privileges of free plants and seed etc.

It would be well to remark in passing that though the Society has had the honour of being a distribution centre for the majority of plant beauty one sees in Indian gardens it has also the privilege of having introduced hybrids of trees, shrubs and bulbs. In 1892 the first Canna and Amaryllis hybrids were reported and for the next ten years these two lines received additions "made in Alipore". From 1902 other plants yielded to the hybridisers touch and Anthurium, Antigonon, Barleria, Begonia, Bauhinia, Brownea, Bougainvillea, Cassia, Croton, Crinum, Cooperanthes, Dracaena, Dombeya, Ixora, Hedychium, Lagerstroemia, Pancratiun, Plumeria, Tecoma, Tithonia and Zephyranthes have all been enriched by cross-bred seedlings. Sporting, which cannot be claimed as actually being brought about by human agency, has also produced many remarkable foliage and flower variations, and these have been discovered by the Society and sent out.

As in the words of a well known advertisement, the Society was "Born in 1820 and is still going strong."

A fine series of aviaries located in a picturesque setting within the precincts of Law Villa, Agarpara on the Barrackpur Trunk Road harbour an immense collection of birds truly representing India's rich and varied avifauna. Birds of other regions are also represented to some extent, and the way these delicate species are kept in condition along with those having different habits and habitat bespeaks their

14. Dr. S. C. Law's Aviaries.



S. C. LAW'S AVIARY.

owner's farsight and great personal experience, which no doubt have been brought to bear on the problem of their housing and accommodation as well as of food supply. In a striking manner these aviaries their design and technique apart—reproduce the conditions under which such a heterogeneous group of birds, of different climes and altitudes, even foreign and exotic, will thrive and prosper, and react to environmental factors without detriment to themselves. They are a living testimony to Dr. Law's keen interest in Ornithology and the science of Aviculture.

A short notice of the several aviaries with their precious contents is appended below: —

Aviary No. I.—This block of many compartments is arranged in a natural way with trees, grass, Orchids, Crotons, and other ornamental shrubs. Birds for special mention are: An assemblage of rare Himalayan birds—Pheasant and Partridge, Thrushes, Flycatchers and Babblers, Drongo, Bulbul, Oriole, Dove and Fruit Pigeon, some rare Chinese and American birds.

Aviary No. II.—Designed for smaller and rather delicate birds: Minivet, Nuthatch, Wryneck, Tit, many Eastern Himalayan species unknown in captivity.

Aviary No. III.—A block of outdoor compartments.

Aviaries No. IV & V.—Paddocks for Stork, Crane and Swan.

Aviary No. VI. (indoor)—Uncommon birds.

Aviaries No. VII & VIII.—Many Himalayan species, Fancy Ducks.

As a field ornithologist, Dr. Law's investigations cover many aspects of bird-life. His tours are regularly so arranged as to give him ample opportunity of making first-hand acquaintance with the avifauna of any place so far little known or imperfectly worked. Even in so well-known an area as the city and suburbs of Calcutta his ornithological

observations, recorded in many journals, are of intrinsic merit and have added considerably to our bird-knowledge. His numerous bird-collecting expeditions are noteworthy in so far as the large numbers of skins collected thereby go mostly to enrich the bird-collections of the Zoological Survey of India. Dr. Law has placed his ungrudging honorary services at the disposal of the Survey for the purpose of the rearrangement of their entire bird-collection.

Besides being the editor of a scientific Bengali journal, known as the *Prakṛiti*, he is the author of several books, both English and Bengali, on Indian birds. His Bengali contributions yield a stimulus to the cause of serious learning in vernacular, and in this connection his erudite study on the birds described in Kalidasa's works deserves mention.

As far back as in the year 1900, the necessity of a Medical Club, like other sister institution of that time, was felt by the majority of the profession in Calcutta and the possibility of founding one, formed the topic of discussion in many a friendly gathering. But no definite scheme was formed until Sir Nilratan Sircar (then Dr. Nilratan Sircar) called in his house a private meeting to discuss the question. Several meetings followed and the idea was at last matured. The first preliminary meeting of the club was held on the 18th of August, 1901, at 72, Harrison Road, the then site of the Club with Dr. Debendra Nath Roy in the Chair.

About 26 members were present on that occasion and a resolution was unanimously passed establishing the necessity of the Club which was named the Calcutta Medical Club.

The club was formally opened by the President Dr. S. C. Sarbadhikari, Rai Bahadur, on 2nd October, 1901 with 65 foundation members. The club was gaining in importance every year and that the usefulness of the institution was being more and more realised by its members. The club steadily became popular with the members

of the medical profession most of whom felt an honest pride to support this institution.

Objects of the Club.

Formerly, the object of the club was the promotion of social and intellectual intercourse amongst gentlemen of the medical profession :

1. By providing—

(a) Suitable Rooms. (b) A Library and Reading Room. (c) Recreation and Refreshment Rooms.

and II (a) Reading of Papers and delivery of addresses and discussion thereon. (b) Exhibition of Cases and specimens with comments. (c) Publication of a Medical Journal and transaction of meetings.

Registration of the Club.

The Calcutta Medical Club was duly registered on the 11th day of September, 1908 in the office of the Registrar of Companies under Act VI of 1882.

The Journal of the Club.

The organ of the club is the *Calcutta Medical Journal*, a monthly journal which has nearly completed its 27th year.

The Bengal branch of the Indian Medical Association was started in March, 1931. The Association has at present 287 members. The present President of the Association is Sir Nilratan Sarkar and its offices are located at 67 Dharamtola Street. The members of the Association regularly meets either to read scientific papers or to hold discussions bearing on medical research.

16. The Bengal Branch of the Indian Medical Association.

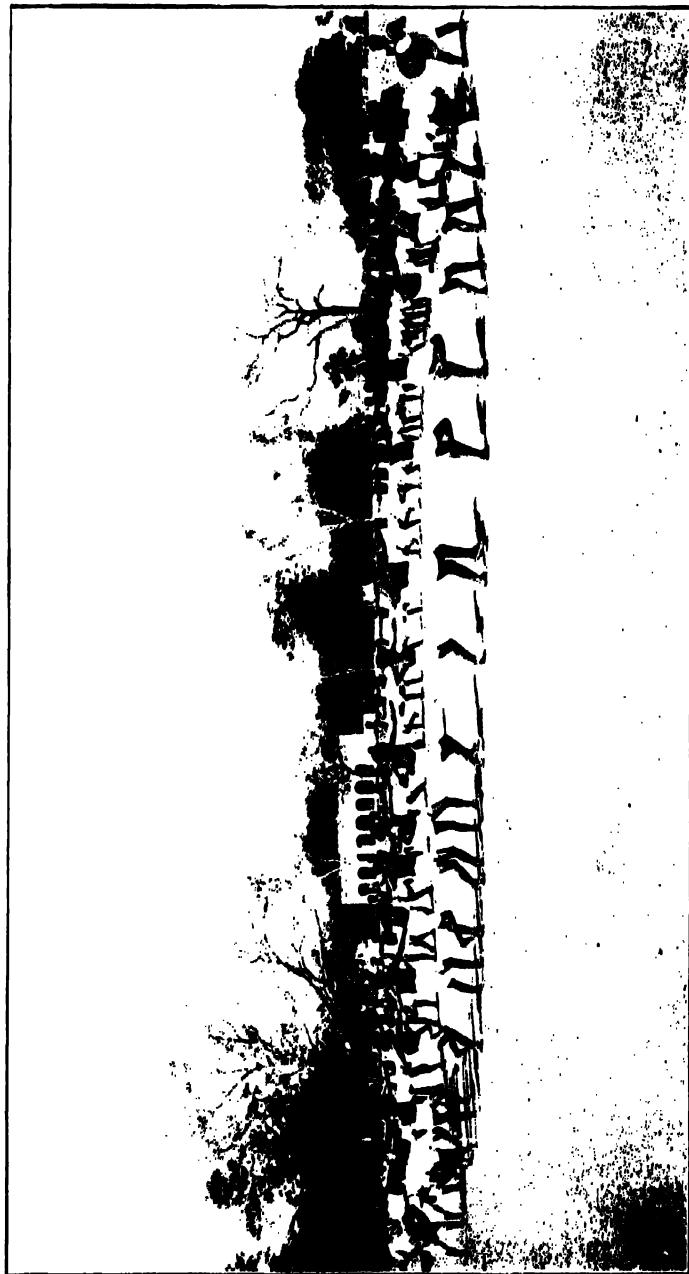
The genesis of the movement lies in Mr. G. S. Dutt, I.C.S.'s (Founder President, Bengal Bratachari Society) researches into and enthusiasm for the folk dances and folk songs of Bengal. It began with his attempt to revitalize the *baul* and *jari* songs and dances which he found being still practised in the villages of Mymensingh in 1929. A society was founded in November, 1929, in that district

17. The Bratachari Organisation.

for the purpose, and a festival was held in the following month at which the significance of these songs and dances to the cultural heritage of the Province was explained, accompanied with actual demonstration.

The Mymensingh society and festival have been the precursors of organisations, since established, based on similar discoveries in the other districts of Bengal. The finest and most virile of the folk dances—the *Raibeshe*—was found in the district of Birbhum. It has been identified by Mr. Dutt as the war-dance of the spearmen and lancers of the Bengal infantry described in ancient Bengali literature. Further discoveries included the *kathi* dance of the Birbhum district and later on the *jhumur* dance of Birbhum and the *dhali* dance of Jessore. In 1931, the "Palli Sampad Raksha Samiti" or *Rural Heritage Preservation Society of Bengal* was established. One of the objects of the Society was to popularise the practice of indigenous folk dances.

For the fullest expression of the significance of these songs and dances, it was however, felt necessary to provide them with a cultural medium, in order that a high ideal of social practice might be aroused. That medium was offered by the initiation of the "Bratachari" movement as a genuine means of self expression for the community, by the formation of a society dedicated to social service and constructive work and earnestly striving towards the development of individual character and an organised collective life. To give concrete form to the movement, training camps have, from time to time, been organised to preach and popularise the Bratachari ideals (as distinguished from the mere practice of folk song and folk dance). Such camps have been organised at Suri (Birbhum) and more recently, at Howrah where the movement was given its present form and at Faridpur, Khulna, Darjeeling and Kurseong. District Societies of Bratacharis have been formed in different districts, at Hooghly Faridpur, Khulna, Pabna, Serajgunj, Darjeeling and other places. A Society has been formed also in Calcutta in one of the Wards (Ward XI). There is also a Ladies Section of the Bengal Bratachari Society (the Provincial Organisation) and a Training Camp was organised in Calcutta in July last under the



FOLK DANCE

direction of the President of the Ladies Section, at which about 40 Indian Ladies have since been receiving instruction.

The most important aspect of the Bratachari movement consists in the spiritual and moral discipline and in the carrying out of the constructive works and social service through the observance of 5 *Bratas* and of the *Pans* and *Manas* as well as of the Bratachari Maxims which are embodied in the first chapter of the book "Bratachari-Sakha".

The movement is based on the five essential principles of right conduct or *Bratas*, namely, Knowledge, Labour, Truth, Unity and Joy. To translate these principles into practice, every Bratachari has to take 16 *pans* or "vows" and 17 *manas* or "don'ts". These vows, in the words of Mr. L. B. Burrows, Commissioner of the Burdwan Division, "cover comprehensively religion, public and personal health, work, recreation, happiness and, in fact, all that makes life worth living". The most characteristic vows are those that relate to the dignity and indispensability of manual labour, the development of civic sense, healthy and clean living and the cheerfulness of spirit. The "Don'ts" represent the negative complements of the vows. The official hand book of the movement, the *Bratachari Sakha*, contains an exposition of its aims and objects, of which a brief account has been given above. The *pans* and *manas*, as indicated, combine to form a body of practical maxims directed towards the development of character, the accomplishment of physical fitness, rural development by constructive work and training in the ideal and practice of a responsible citizenship based on sound nationalism.

To those who may regard the Bratachari movement to be an unnecessary duplication of the Boy Scout movement, it may be explained that the former is really complementary to the Boy Scout movement and does not come into conflict with it. Though the development of the Bratachari movement has been somewhat parallel to that of the Boy Scout movement, it has assumed a distinctive form, being rooted in indigenous culture,

The Indian Museum is an offspring of the Asiatic Society of Bengal and owes its birth to Dr. Nathaniel Wallich, a Danish Botanist, who, in 1814, vigorously advocated the necessity of establishing an institution of this kind. A start was made, and the Society began to collect Archæological, Ethnological, Geological and Zoological exhibits. In 1835 the attention of the Government of India was directed towards the development of the mineral resources of the country, and in 1840 they opened a Museum of Economic Geological collections in the Society's rooms. In 1858 the members of the Society urged upon the Government of India the necessity for the foundation of an Imperial Museum for housing the Society's collection. After prolonged correspondence which lasted till the middle of 1865, the Museum Act of 1866 was passed according legislative sanction to the transfer of the Society's collection to the new Museum building.

The Museum consists of five sections, *viz.*, the Archæological, the Art, the Geological, the Industrial and the Zoological Section.

Archæological Section.—The Archæological collection is the richest in the East. The antiquities from Mohenjo Daro, in Sind, which are said to be about 5,000 years old, are the most remarkable in the collection of prehistoric antiquities exhibited in the New Hall. The other relics, dating from the 3rd century B.C. onward, consist of the precious contents of the relic box of the stupa of Piprawa, capitals of the monolithic columns of Asoka, the great carved railing of the stupa of Bharhut and a splendid collection of sculptures representing all phases of the history of Indian plastic Art. The collection of coins is unique in its variety. The Moslem gallery contains a large collection of Arabic and Persian inscriptions and carved stones illustrating Indo-Moslem decorative art. Visitors are also permitted to see two historic jewels, which formed part of the loot of Nadir Shah, when he invaded India and defeated the army of Muhammad Shah in February, 1739.

Art Section.—The Art Gallery is a pageant royal of oriental splendour. Among the noteworthy exhibits may be mentioned the

large Tibetan Banner from Burma, the white muslin *Chapkan* very finely embroidered in gold, said to have been worn by the Emperor Aurangzeb, and given as a reward to one of his attendants after a victory on the battle field, the Bhavanagar House,—a specimen of Hindu style of wood carving, the State Council throne of King Thibaw from Burma, and a necklace and girdle made from human thigh bones worn by Lamas. The picture gallery contains a rich collection of pictures representing the various schools of Indian painting.

Geological Section.—The galleries of the Geological Section are divided into four groups, Invertebrate fossils, Minerals, Meteorites and Vertebrate fossils. The fossil gallery contains Indian fossils as well as foreign invertebrate and plant fossils (types). There are two petrified trees excavated from railway cuttings near Asansol which are of remarkable antiquity and are said to be about two hundred million years old. The Meteorite gallery contains an unique collection of Indian and foreign meteorites. The Siwalik Gallery contains the skulls and limb-bones of the now extinct ancestor of the Indian elephant and specimens of *Sivapithecus*—the missing link between man and ape.

Industrial Section.—The Industrial Section mainly consist of raw materials and finished products of the Indian vegetable world. Of the exhibits may be mentioned about 100 varieties of paddy as cultivated in Assam and Bengal, edible fruits, medicinal plants, food grains and cereals from different part of India. The process of manufacture of quinine from cinchona bark, and the opium plant with all the implements used for extracting opium in different provinces, are prominently exhibited. All kinds of fibres, showing the stages from the raw materials to the finished products, are on view. A small room is devoted to tea, exhibiting the machinery for drying, curing and manufacturing tea as sold in the market.

Zoological Sections.—This section consists of the Invertebrate gallery, the Insect gallery, the Vertebrate galleries, a small Fish gallery, and the Amphibian, Reptilian and Bird galleries, the large Mammal gallery and the small Mammal gallery. In each of these

galleries there are representative forms of almost all types of animals found within Indian limits and, in special cases, of peculiar animals not found in India.

It is frequently supposed that most of the public institutions in Calcutta derive their importance from the fact that Calcutta was the Capital of India prior to 1912. This is not true at

19. Imperial Library.

any rate in the case of the Imperial Library, which grew out of the Calcutta Public Library, founded in 1835 in pursuance to the resolution adopted at a public meeting held in Calcutta. The Library was located in the house of Dr. F. P. Strong in Esplanade Row from its foundation to the latter part of July 1841, and subsequently in a portion of the College of Fort William till June, 1844 when it was removed to the upper floor of the Metcalfe Hall, which had been built on a piece of land granted by the Government in 1840 to commemorate Lord Metcalfe, who had removed some restrictions on the Indian Press by his Act of September 15, 1835. The building also housed the Agri-Horticultural Society of India. The Government of India acquired the entire building and the books of the Library in December, 1901, and amalgamated these with those comprised in the then Imperial Library. The re-organised Library was opened to the public on January 30, 1903, in terms of the Imperial Library Act, 1902 (Act I of 1902). The Imperial Library was removed from the Metcalfe Hall to its present site in 1922.

The Imperial Library is the largest library in India, but it is still very small compared with, say, the Library of the University of Tokyo. That is perhaps not to be wondered at, for the public demand for a library, to which such libraries as the Tokyo University Library and the Imperial Library are the answers, is very much weaker in India than in Japan. It is hoped that the Imperial Library will before long be built up to something much more imposing. It will be doubtless made a Copyright library, for instance. Meanwhile, it can be said to have been of notable service to the small number of scholars in India who have made names for themselves beyond the confines of

India, and it has been a place where many young men have read extensively after finishing their College careers.

The class in which the Imperial Library is strongest is naturally the class of books and pamphlets dealing with India. The aim is to have in the library everything in whatever language that has been written about India. Much has been done in collecting printed materials, but of manuscript material the Library still possesses hardly anything.

There is a very valuable collection of Arabic and Persian MSS., and a collection, but not so valuable, of Sanskrit MSS. There are fair beginnings of collections of prints and maps.

The Catalogues of the Library form a body of bibliographical material of very great value. Those in the form of printed volumes (other of the catalogues are in card form in cabinets) include an Author Catalogue in two volumes, with a supplement, also in two volumes; a Subject-Index in two volumes.

The Library, has not only reading rooms at the Foreign and Military Secretariat, Esplanade-East, Calcutta, which are open to the general public (but not to those under eighteen years of age), but is also a Lending Library; as such it sends books all over India, Burma, and Kashmir, and occasionally even further. There is no charge made for using it. The entire cost of the Institution is borne by the Central Government.

The Library remains open from 10 to 7 every day except on Gazetted holidays when it is open from 10 to 5. On Sundays it remains open from 2 to 5.

LEADING
RESEARCH JOURNALS.

ARTS.

1. Journal of the Department of Letters,
published by the Calcutta University.
2. The Journal of the Asiatic Society of Bengal.
3. The Indian Historical Quarterly—
edited by Dr. N. N. Law, M.A., Ph.D.,
(9, Panchanan Ghose Lane, Calcutta).
4. The Calcutta Oriental Journal—
edited by Mr. Kshitish Chandra Chatterji,
(61-A, Ramkanta Bose Lane, Calcutta).
5. Indian Culture (Journal of the Indian Research Institute).
edited by Dr. D. R. Bhandarkar, Dr. B. M. Barua and
Dr. B. C. Law,
(55, Upper Circular Road, Calcutta).
6. The Journal of the Greater India Society,
edited by Dr. U. N. Ghosal,
(21, Badurbagan Row, Calcutta).
7. Vangiya Sahitya Parishat Patrika,
edited by Dr. Nalinaksha Dutt, and published by the
Society.
8. Journal of Oriental Art—
edited by Dr. Abanindra Nath Tagore and Dr. Stella
Kramrisch.

SCIENCE.

1. Journal of the Department of Science, Calcutta University.
2. Bulletin of the Calcutta Mathematical Society.
3. Journal of the Calcutta Chemical Society.
4. Journal of the Geological Society of India.
5. Sankhya—the Journal of the Institute of Statistics.
6. Indian Journal of Physics and Proceedings of the Indian Association for the Cultivation of Science.
7. Indian Journal of Psychology.
8. Prakriti (in Bengali) edited by Dr. Satya Charan Law.
9. Medical Science—
 1. Indian Medical Journal.
 2. Calcutta Medical Journal.

SERIES OF PUBLICATIONS.

1. Bibliotheca Indica (The Asiatic Society of Bengal).
 2. Memoirs of the Asiatic Society of Bengal.
 3. Calcutta Oriental Series—
The Calcutta Book Agency,
9, Panchanan Ghose Lane.
 4. Publications of the Indian Research Institute,
55, Upper Circular Road.
 5. Calcutta Sanskrit Series—
General editor, Dr. Amareswar Thakur,
The Metropolitan Publishing & Printing House, Ltd.,
56, Dharamtola Street.
 6. Publications of the Vangiya Sahitya Parishat.
 7. Publications of the Sanskrit Sahitya Parishat.
 8. Publications of the Greater India Society.
 9. Publications of the University of Calcutta.
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CHAPTER VIII.

TRADE AND INDUSTRY.

There are ample evidences to show that the Lower Gangetic Valley had a brisk trade with foreign countries from very early times. *The Periplus of the Erythrean Sea*, a Greek text of the

Early History. 1st century A. D., records—"there is a river called the Ganges and it rises and falls in the same way as the Nile. On its bank is a market-town which has the same name as the river Ganges. Through this place are brought malabathrum, and Gangetic spikenard and pearls, and muslins of the finest sorts, which are called Gangetic". The same text further informs us that silk yarn and silk cloth as well as raw silk coming from China used to be exported from this region in those days to the coast of Madras (Damerica i.e. the Tamil country) and thence to Egypt. The ships which used to sail to the mouths of the Ganges from foreign lands were very large. Though we do not always get the details about the commodities of export and import there are references in Chinese literature to vessels regularly sailing to and from the port of Tamralipti.

Regarding the trade and wealth of Bengal Vasco da Gama took the following information to Portugal in 1498: "*Benguala* has a Moorish King and a mixed population of Christians and Moors. Its army may be about twenty-four thousand strong, ten thousand being cavalry, and the rest infantry, with four hundred war elephants.

Report of Vasco da Gama. The country could export quantities of wheat and very valuable cotton goods. Cloths which sell on the spot for twenty-two shillings and six pence fetch ninety shillings in Calicut. It abounds in silver."

The Mughals called Bengal the "Paradise of India." Caesar de Federici who was in Hooghly in 1567 says that in the Hooghly river the large ships of the Portuguese came up to Betor (near Sibpur, modern Howrah), whence the smaller ships sailed up to Satgaon and laded "Rice, Cloth of Bombast of divers sorts, Lacca, great abundance of Sugar, Myrabolans dried and preserved, long Pepper, Oyle of Zerseline and many other sorts of merchandise".

Manrique who was in Bengal during the palmiest days of the Portuguese says that the principal things which the Portuguese brought to Bengal from Malacca, Sumatra, and were "Brocades, Brocateles, Cloth, Velvets, Damasks, Satins, Taffetas, Taffiosinas, Taffisirias Escomillas or Muslins", of all colours but black, which colour was considered ill-omened in Bengal. From Malacca they also brought cloves, nutmegs, and mace and from Borneo the highly prized camphor. They brought cinammon from Ceylon, and pepper from Malabar. From China they brought silks, gilt furniture such as bedsteads, tables, coffers, chests, writing desks, boxes and very valuable pearls and jewels, for labour being very cheap in China "these were made in European style but with greater skill and cheaper". From the islands of Maladives they brought sea-shells (*kaurim*) which were during the period of Hindu kings current in Bengal as coins and were known as *cowries*. The bigger kind of shells called *chanquos* were brought from their fisheries on the Choromandel coast. They imported from Solor and Timor both the white and red varieties of sandal-wood which were in Bengal a rich commodity.

About the Portuguese exports from Bengal Pyrrard de Laval wrote in the beginning of the 17th century A. D.: "The inhabitants of Bengal both men and women, are wondrously adroit in all such manufactures as of cotton, cloth and silks and in needlework, such as embroideries which are worked so skilfully, down to the smallest stitches that nothing prettier is to be seen anywhere". According to

Manrique (1628) 100 ships were annually laden in the ports of Bengal to export such commodities as rice, butter, oil and wax. The cost of commodities was very cheap :

Rice, a <i>candi</i> (about 500 lbs.		
but in Bengal 1200 lbs)	... Rs. 3/- or 4/-	
1 contaro of butter (75 lbs.)	... „ 2/-	
20 or 25 fowls	about „ 2/-	
1 Cow	... Re. 1/-	
200 lbs. of sugar	... /7/- or /8/-	Ans.

This account of Manrique is confirmed by other independent accounts.

Dacca was famous for its muslins. “These muslins were made fifty and sixty yards in length and two yards in breadth and the extremities were embroidered in gold, silver, and coloured silk. The Emperor appointed a supervisor in Dacca to see that the richest muslins and other varieties of cloth did not find their way anywhere else except to the Court of Delhi. Strain on the weavers’ eyes was so great that only sixteen to thirty years old people were engaged to weave. These are the men who with their simple instruments produced those far-famed muslins that no scientific appliances of civilised times could have turned out.”

There was local commerce in various other things. The betel-leaf alone used to bring four thousand rupees of revenue to the Governor of Dacca. There was a great trade in salt, sugar, wax, silk and cloth in Hijli. There was vast trade in salt in the island of Sandwip and about 200 ships laden with salt annually sailed from there. In Midnapore scents were manufactured from flowers and scented oils from a kind of grain which were things of great luxury.

The chief English exports from Bengal were cotton and silk piece goods, raw silk and saltpetre, as early as 1651. The Dacca muslims were exported for the first time in 1666. Its use soon became general in England. The Company established factories at Kassimbazar and Malda for the manufacture of silk. The export of silk and cotton goods to England was soon found ruinous for the English industry and the export had to be restricted by legislations in 1700 and 1720.

Early English Trade.

Cotton goods however continued to be the main article of export till about 1780. In 1780 about 805,010 pieces were sold in England. Printed cotton goods from Bengal were completely withheld for four years from 1782. The cotton goods exported from Bengal were of various kinds : Cossaes (Khasa), Mulmul, Terrindam, Dooraes, Callicoes, and Hum Hum.

Articles of Export.

Silk was another important item of export from Bengal. As the Bengal silk was found unsatisfactory in 1771 silk worms were imported from China to improve the quality of silk cocoons. It had the desired effect and the export of raw silk greatly increased within a few years. Between 1776 and 1780 the annual export of raw silk from Bengal amounted to 560,283 lbs., almost double of the total export from China, Italy and other countries.

Till the end of the 18th century the chief imports from England were the woollens and the metals. In the year 1795 the imports were —“cloth (broad cloth) 449 bales, long ells 50 bales, broad long ells 40 bales, embossed cloth 6 cases, embossed long ells 17 cases, copper 990 tons, lead 300 tons, iron 300 tons.”

Imports.

Towards the end of the 18th century England improved the condition of her industry considerably. There was practically a revolution in English industry and this directly affected the hand loom industry of Bengal. The cotton industry of Bengal rapidly declined also through other causes. In 1786 export of cotton yarn to

Decline of Industries in Bengal.

England was stopped by legislation. In Bengal the Company had made it almost a monopolistic concern by making advances (*dadans*) to the weavers. This caused great oppression on the weavers. Though Warren Hastings introduced certain ameliorative measures the oppression could not be altogether stopped. This also contributed to the decline of the cotton industry to a considerable extent. Besides improved methods of spinning introduced in England in the meantime enabled the English manufacturers to produce fine cotton goods which could easily compete with the Bengal muslins. From 1783 British cotton goods began to be imported into Bengal. In 1786 the export of Bengal cotton yarns to England was stopped by legislation—a measure which was adopted to help the British industry.

The Company did not take any step to protect the national industry of Bengal from the competition of its new rival. "It was not even possible to reserve for the Bengal industry its foreign market. It was hardly prudent for a private corporation enjoying special privileges from the British Parliament, to antagonise the manufacturing interest in England by restricting the import of British cotton goods to India. In fact, the Company looked at the question of Lancashire competition, not from the point of view of the ruling power in Bengal, but solely from the standpoint of its own pecuniary interests as a trading body."

Calcutta now occupies the first place in Indian trade. There is still an excess of exports over imports. In 1929-30 the value of the total export was Rs. 1,40,42,00,000 whereas the value of imports was about Rs. 99,81,00,000. The main commodities of exports are Textile materials like raw jute, silk and wool, tea, grains, pulses, oil seeds, shellac, hides and skins, manganese, pig iron, coal and amongst manufactured articles, chemicals, drugs, medicines, metals other than steel and iron, jute, cotton and silk yarns. Salt and Sugar

**The indifference
of the Govt.**

**Present state of
Trade.
Exports and
Imports.**

which were in earlier times commodities of export are now imported. The chief commodities of import are cotton goods, metals, oils, petrol, machinery, salt, sugar, machineries, railway materials, motor cars, hardware and provisions.

As far as the shipping of the Port of Calcutta is concerned 996 vessels either with cargo or in ballast entered the port in 1930-31. Its total tonnage was 3,052,358. Of these 917 vessels with the total tonnage of 2,732,713 were cleared during the year. In the year 1929-30 a larger number of vessels (1,076) entered the Port and 948 were cleared. Bengal trades with a large number of foreign countries like the United Kingdom, Ceylon, Straits Settlements, China, Egypt, Canada, Australia, Germany, France, Belgium, Italy, Japan, America, Java, Borneo etc. The trade with the United Kingdom is however the largest—the total value of imports from the United Kingdom in 1929-30 being Rs. 41,84,94,000 and that of the export to the United Kingdom from Bengal in the same year being about Rs. 32,93,79,000.

After the decline of the handloom industry of Bengal there was no attempt on the part of the people of the country to introduce the modern machineries for the manufacture of cotton goods. Some of the English firms had been gradually introducing latest machineries for the manufacture of jute only. The first impetus to the development of the native industry was given by the National Movement which was started on account of the partition of Bengal in 1905. From this time organised efforts began to be made to establish cotton mills and other factories in order to make the people economically independent. On account of this movement a large number of mills and factories have grown up in different parts of the country. Though the state of industry in Bengal is not yet as satisfactory as it ought to be enormous effort has been already made and is still being made for developing it.

Revival of Industry.

In the year the number of Factories in Bengal which were in the register rose to 1603. The number of factories that worked during the year 1931 was 1471 of which 1065 were perennial and 406 were seasonal concerns. The number of operatives employed in registered factories in the same year was 480,439 as compared with 563,877 in 1930. This shows a decrease of 83,438 of which a decrease of about 63,000 is shown only by Jute Mills and Jute Presses. This decrease clearly shows how the gradual depression in the Jute Industry has affected Bengal.

Amongst the number of factories in and near Calcutta there are 15 cotton mills, 12 hosiery and 94 jute mills. The number of match factory is 16. There are besides 6 soap factories, 8 tanneries, 9 glass factories, 193 rice mills, 59 oil mills and 9 flour mills. There are other establishments for the manufacture of silk and woollen goods, gramophone records, biscuits etc. As the Census Reports show about 140,269 workers of both sexes were working in the industrial establishments in Calcutta with its suburbs and Howrah in 1931. The number of workers in the jute mills has fallen to some extent on account of the trade depression. The following figures of the total number of workers in various concerns will give a true picture of the state of various industries in 1931 :

1. Textiles—

1. Cotton ginning, cleaning & pressing	...	277
2. Cotton spinning, sizing & weaving	...	1,821
3. Jute pressing, weaving & spinning	...	31,754
4. Rope, twine, string & other fibres	...	122
5. Wool carding spinning etc.	...	14
6. Silk spinning & weaving	...	26
7. Horse-hair etc.	...	5
8. Dyeing, bleaching, printing etc.	...	139
9. Lace, Crepe etc.	...	155
		<hr/>
		34,313

II.	Hide, skins etc.	...	...	...	211
VI.	Wood	...	...	...	12,863
IV.	Metals	...	...	...	4,104
V.	Ceramics	...	...	...	1,692
VI.	Chemical products	...	...	...	1,535
VII.	Food Industries	...	...	...	9,495
VIII.	Industries of dress & toilet	...	...	...	31,951
IX.	Furniture Industries	...	...	...	1,423
X.	Building Industries	...	...	...	14,024
XI.	Construction of means of transport	...	...	...	1,146
XII.	Heat, light, electricity etc.	...	...	...	2,668
XIII.	Misc. industries	...	...	...	24,003
					140,269

As far as the industrial output of Bengal is concerned some details are available about the production of cotton yarns and woven cotton goods. The considerable decrease in **Cotton Industry.** imports since 1930 indicates to some extent the growth of native industry. The value of total imports during 1929-30 was Rs. 83,37,65,000 whereas that of 1930-31 was only Rs. 51,20,97,000. This decrease is considerably due to the universal trade depression but the growth of the native industry may be partly responsible for it. In the manufacture of paper Bengal occupies the first place amongst various provinces of India. Bengal produced in 1929 about 34,299 tons of paper of the value of Rs. 1,58,17,520, which was more than six times of the total production by other provinces. An idea of the output of cotton mills in the province may be made from the following figures :

YARN

in thousands of lbs.

	1927-28	1928-29	1929-30
Bombay	... 491,840	329,856	467,289
Madras	... 68,748	69,036	74,480
U. P.	... 66,611	60,328	76,456
C. P.	... 42,860	44,057	45,111
Bengal	... 34,347	30,022	37,053
Delhi	... 12,107	14,319	18,442

WOVEN GOODS

(piece goods, chadars, dhutis, etc.)

in thousands of lbs.

	1927-28	1928-29	1929-30
Bombay	... 421,591	284,057	376,413
U. P.	... 25,115	25,698	30,339
C. P.	... 19,217	20,265	21,343
Madras	... 19,949	19,632	20,714
Delhi	... 10,205	12,162	15,939
Bengal	... 8,307	9,959	14,357

Indigo was an article of Indian trade from the ancient times. The Latin writers refer to it as early as the 1st century A.D. Pliny thus writes about Indigo in 70 A.D.: "Indigo **Indigo.** (*indicum*) is a colour most esteemed, out of India it commeth. . . it is valued at 20 denarii the pound." Towards the end of the 13th century the great Venetian traveller Marco Polo recorded: ". . . Indigo. This is made of a certain herb which is gathered and (after the roots have been removed) is put into great vessels upon which they pour water, and then leave it till the whole of the plant is decomposed."

Indigo first appeared in the East India Company's Bengal "investment" in 1780. From the beginning of the 17th century indigo was one of the chief articles of export to England but the supply was at first obtained from Agra, Lahore and Ahmedabad. In the middle of the 18th century indigo was partly obtained from American colonies but this supply was stopped by the War of American Independence.

"In 1779 the Company entered into a contract with one Mr. Prinsep, then resident in Calcutta, to purchase indigo from him at very favourable prices. This induced other Europeans to take to the cultivation of indigo from whom also the Government made purchases. It suffered a heavy loss of £80,000 in these transactions but it succeeded in course of a few decades in placing Bengal in the first rank of the

indigo-producing countries of the world. In 1810, out of a total import of 6 million lbs. of indigo into Great Britain, more than 5 million lbs. came from Bengal."

The indigo industry had a prosperous career till about the last quarter of the 19th century. But when synthetic indigo prepared by the German chemists was placed in the market in 1897 the future of the Indian indigo industry was doomed. Henceforth there was a progressive decline in the industry and ultimately it was reduced to insignificance.

Jute was produced in Bengal from very early times but its production was limited to what was required for local consumption.

Handwoven jute was an industry of the province in the eighteenth century. The *Ain-i-Akbari* refers to the production of sack-cloth in North Bengal. In the middle of the eighteenth century the export trade in gunnies developed. The President and Council at Bombay enclosed an indent for gunnies in 1753. Similar demands were made from Madras in 1759. This export trade in hand-made gunnies continued to develop for about a century. In the meantime the development in mechanical appliances in Europe brought about the ruin of this hand-loom industry.

In 1828 the first consignment of jute fibre amounting to 364 cwts. (500 maunds) was exported from Bengal. Gunny cloths began to be manufactured by mechanical appliances in Europe

Early History. from the middle of the 19th century. In 1850-51 the number of gunny bags and cloth exported from Calcutta was 9,035,713 which were valued at Rs. 2,159,782.

In 1854 the first attempt was made to use European machineries in Bengal for the manufacture of Jute. A Ceylon planter, Mr. George Auckland, founded the first Jute Mill at Ishra near Serampore in the Hooghly District. The Mill is now called the "Wellington Mills". The second jute mill, the Baranagar Jute Mills, was founded by the Borneo Company Ltd. in 1857 and the Gouripur Jute Factory was started in 1863-64. Since then jute mills came into existence in rapid succession. This rapid growth in the number of mills in Bengal and

the increasing demand of jute fibre in Europe completely ruined the old hand-loom industry in jute.

“There were 43 mills at work in Bengal and one in Bombay in 1907. The number of looms working in 1887 was 7,164 which increased to 9,841 in 1895, to 23,884 in 1905 and **Number of Mills.** to 39,401 in 1917. In 1920, 76 mills were in working order and 16 new mills under construction. Out of the 76 running mills there were three in Madras, one in the United Provinces of Agra and Oudh and the rest (72) in Calcutta. The capital laid out for these 76 mills up to 1918-19 amounted to Rs. 14,07,14,680 registered in India and to £2,209,716 registered in the United Kingdom, including Rs. 3,42,90,500 and £71,358 respectively in debenture. During 1919-20, fourteen mills were registered in India, with an authorised capital of Rs. 6,62,00,000, showing a great development of the industry in Bengal. The actual consumption of jute by these mills nearly doubled during the period between 1910 and 1920, while the foreign exports of raw jute continued to increase very steadily. There was again an all-round expansion of the trade from 1922 which continued till 1929. The number of mills increased in Bengal from 72 to 89. There has again been a very serious set-back since 1930, both for the raw product and the manufactured goods, due to the excess of production of raw fibre as well as that of the mills and also to the unprecedented world-wide trade depression”.

The Jute trade has suffered considerably from the effects of the war. The following figures for the values of **Out-turn.** exports of raw jute and manufactured goods clearly show it :

Year.	Value of raw jute in sterling. 1930	Value of manufactures in sterling. 1931
1913-14	£20,550,929	£18,848,759
1914-15	£ 8,606,802	£17,213,440
1915-16	£10,428,024	£25,318,934
1916-17	£10,858,736	£27,781,156
1917-18	£ 4,302,559	£28,562,050
1918-19	£ 8,480,052	£35,101,466

Jute is at present grown in Bengal, Assam and those districts of Bihar which are adjoining to Bengal. But the largest quantity is still produced in Bengal. The following table indicates the extent of land in which Jute was cultivated in the three provinces during the years 1930 and 1931 :

	1930	1931
Bengal	30,62,300 acres	16,13,700 acres
Assam	1,92,000 „	95,600 „
Bihar & Orissa	1,79,000 „	1,47,500 „

There has been therefore a considerable decrease in the acreage of jute cultivation particularly in Bengal.

I.

IMPORTS TO BENGAL 1864.

Copper, Tutangue Tyer in pigs and Gants.

Chank—a vast quantity.

Betelnut.

Pepper.

Some sorts of chints.

Girdles and Sashes of Maslepatam.

ARTICLES OF IMPORT 1870—1900.

1. Animals specially horse. 2. Apparel—principally boots and shoes. 3. Arms and amunitions. 4. Corals. 5. Cotton manufactures—cotton twist and yarn, cotton fabrics, white and coloured piece goods etc. 6. Drugs and Medicines. 7. Liquors wines and spirits. 8. Matches. 9. Metals and metal manufactures railway materials etc. 10. Mineral oil. 11. Provisions—principally dates, cheese, butter, bacon, ham etc. 12. Salt. 13. Silk fabrics. 14. Spices. 15. Sugar. 16. Tobacco, principally Manilla cigar, imitation Havanas etc. 17. Umbrellas. 18. Woolen goods.

II.

ARTICLES OF EXPORT 1684.

Raw silk—a staple commodity, 300 bales of 2 maunds each sailable yearly.

Sugar Tissindy—sailable 3,000 bales of 2 maunds each yearly.

Long pepper—7000 maunds per anm.

Turmerick 1500 maunds per anm.

Saltpetre 2000 to 3000 maunds per anm.

Cotch a commodity which seldom fails, 4000 maunds per anm.

Dammer or pitch 400 maunds per anm.

Ophium 50 to 60 maunds.

Several sorts of piece goods from Cassumbazer :

Petambers, Deryeyes, Chamberbanues, Taffiteas of several sorts, Flowered Lungees, Taramandies, Several sorts of silk, Girdles, Soosias—a few, Flatches, a few.

ARTICLES OF EXPORT 1870—1900.

1. Caotchouc.
2. Coal.
3. Cotton and Cotton manufacture principally raw cotton, Indian twist and yarn Indian piece goods and other manufactures etc.
4. Cutch and Gambier.
5. Food grains and flour, principally rice, wheat and wheat floor, gram, other grain and pulses etc.
6. Ginger.
7. Hemp.
8. Hides and skin.
9. Horns.
10. Indigo.
11. Jute and Jute manufactures.
12. Oilseeds and vegetable oils.

13. Opium.
14. Saltpetre.
15. Silk and silk manufactures.
16. Tea.
17. Tobacco (manufactured).

SOME INDUSTRIAL CONCERNS.

The Mill is situated at Serampore at a distance of about 13 miles from Calcutta. It is a limited concern being the property of about six thousand share-holders who are all Bengalees with the exception of a few who are Indians of other Provinces. Its present Managing Agents are Messrs. Bengal Textile Agency, Limited, of which Rai Satish Chandra Chaudhuri Bahadur is the Managing Director and Mr. S. Bhattacharjee the Secretary.

In 1905 the Ante-partition Movement of Bengal with the Collateral Movement of Boycott popularly known as the Swadeshi Movement was in its full swing and a spirit of constructive nationalism grew up in the country. As an embodiment of that spirit a Company was floated by the leaders of Bengal in the name of The Bengal Luxmi Cotton Mills Limited in 1906, to remove the want of a Bengalee concern for spinning and weaving, and they purchased a Mill which was at that time known as The Luxmi Tulsi Mills. Thus was born the Pride of Bengal, the most favourite industrial institution of the Bengalees.—The Banga Luxmi.

About twenty years after its establishment i.e. in 1927 the Mill had again to undergo a very bad time under its previous management. Its assets fell down while its liabilities rose up, so much so that as a consequence thereof the Mill was about to be put into liquidation. It was at this critical time in its history that the present Managing Agents came forward at no small financial risk, to save the Mill from utter ruin. Since then the Mill has been working with renewed vigour.

There are altogether 724 looms and 35652 spindles in the Mills at present, and the labour staff consists of 2440 heads. Under the

present management the production has been steadily increasing and about 2,61,000 lbs. of yarn (for cloth and for bazar) and about 12,80,000 yds. of cloth are now produced by the Mill each month. The cotton used is mostly Indian, consisting of the Cambodia, Punjab American, and C. P. varieties. Yarns from 6s to 40s and cloths of every description, viz, dhuties and sarees, shirtings, long cloth, twill &c., are manufactured. Steam was the main motive power up to May 1931, and since then the Mill has been worked by electric motors fed by current supplied by the Calcutta Electric Supply Corporation Ltd.

The mill was started barely one year ago. During the last one year, the site on which the structure of the mill has been reared was secured,—a very suitable site no doubt—only 9 miles from Calcutta and on the Barrackpore Trunk Road. The machinery which has been installed and is now at work was indented and most important of all, the shares of the Company which acquired a reputation of its own mostly sold off.

**The Basanti
Cotton Mills.**

At present the mill has been started with 200 looms and 10,000 Spindles at work.

The production of the mill is now out in the market. Special up-to-date machinery for producing yarn of higher counts viz., 120s and 100s are already installed and working with full swing. The mill will also produce product of lower counts viz, course cloth.

The Bengal Chemical and Pharmaceutical Works, Ltd., owes its very inception to Acharya Sir Prafulla Chandra Roy. Started originally as an unpretentious small concern for manufacturing medicines from indigenous materials, it has developed within the last 33 years to be the largest Drug and Chemical manufacturing concern in the East. The products manufactured by the Company are now well-known all over India, Burma, Ceylon, Straits Settlements and Siam. The initial capital of Rupees 50,000/-

**The Bengal
Chemical and
Pharmaceutical
Works, Ltd.,
Calcutta.**

has been gradually raised to 22 lacs. The sales have progressively increased from Rs. 25,000/- in the first year to over Rs. 48,00,000 in the present year.

The Company owns two factories, one at Manicktolla (an immediate suburb of Calcutta) and one at Panihati (about 9 miles off Calcutta). The total area covered by the two factories comes up to about seventy acres.

The Factory at Manicktolla—has its own Electric Power House, Water Works, Fire-brigade, Printing Press, Saw Mills, and Machine Shops and several elaborately equipped Laboratories for testing raw and finished products and conducting research.

Although started in Bengal the Company is in reality a national concern to-day, for its shareholders, instead of being confined to the province of Bengal only, come from almost all the provinces such as Bombay, Madras, Burma, U. P., C. P., Berar and Native States as well. The Company also uses numerous raw materials from the various provinces.

Between the two factories the Company employs more than 2000 men among whom there are a large number of chemists, medical men and various other technical experts. The Company is always solicitous for the well-being of its employees and maintains well-equipped hospital, library and club, and gives facilities for out-door sports as well. It maintains a provident fund, a co-operative loan society and a co-operative stores for the benefit of the employees. There is also special arrangement for supplying lunch to the Company's employees, by which they can have wholesome food at concession prices.

Nearly 500 employees are provided with comfortable quarters and there are school and play grounds for the children of these resident employees.

The principal lines of the manufacture of the Company are :

(i) Indigenous medicinal preparations: In this department preparations from indigenous herbs and plants recognised by the

Ayurveda are being manufactured by the modern scientific methods. These products have been appreciated not only by the lay public but also by the votaries of the ancient Indian system of medicine.

(ii) Acids: The Company has got large Sulphuric Acid plants of the latest type producing 18 tons of acid daily. It also manufactures both pure and commercial nitric and hydrochloride acids.

(iii) Fine and Heavy Chemicals: Ammonia, Aluminium Sulphate, Caffeine, Dextrine, Sodium Salicylate, Alum, Nitrates of Potash, Ferro Alum etc., Sulphates of Magnesia, Iron and Soda, Tasteless Quinine, Arsenical preparations.

(iv) Pharmaceutical preparations: Apart from preparing a full range of medicines official in the British pharmacopoeia the Company manufactures a large number of efficient proprietary medicines, which, owing to their excellence of quality and standard have won the favour of the medical profession and are being extensively used by them, often in preference to imported preparations, similar in nature.

(v) Biological products: These include medicinal injections, vaccines, sera, organo-therapeutic products and hemoglobin preparations. Being carefully prepared under the supervision of the experts specially trained in this line, they are gaining favour day by day with the medical profession as they are not only fresh but are also more suitable to the constitution of the people of the land.

(vi) Vitamin Products: In this department various standardized preparations are being manufactured and it is a matter of satisfaction that these products have been highly spoken of by the medical profession.

(vii) Surgical Dressings: The Company possesses most up-to-date plants for the manufacture of all the varieties of surgical cotton and other dressings, e.g. Bandage, Lint, Dry and Moist Gauze, etc. Only Indian cotton and cloth are used for these purposes.

(viii) Tar Products: Include creosote, anthracene oil, pitch, Phenol Brand disinfecting fluids and wood preservatives and insecticides.

(ix) Toilet Requisites: Include toilet and antiseptic soaps, hair oils, hair lotion, perfumes, face powders, creams and dentfrices.

(x) Instruments and Appliances: The Company manufactures a large variety of scientific instruments for schools and colleges, and fittings and appliances for hospitals and laboratories. Among such items may be specially mentioned the analytical balances, surgical sterilisers, oxygen generators and hospital furniture. The Company also specialises in gas-plants and chemical fire-extinguishers and installation of Tube-Well for which a large staff of skillful operators is maintained.

(xi) Printing Ink: Of late the Company has taken up this line and has started manufacturing Printing Inks of every type.

Working on genuine scientific lines the Company takes scrupulous care in selecting the various raw materials and in assaying the finished products which are passed through rigid before being issued to the market for sale.

In recognition of the importance and value of research investigation, the Company maintains a Research Department in which a troupe of specially trained workers are engaged in the solution of newer problems in Chemistry and Pharmacy.

For the supply of useful Therapeutic agents, India had to depend entirely on foreign manufacturers till of late. It will be recalled that the Bengal Immunity Company was first started in 1919 when for the first time it broke fresh grounds in India in the direction of the manufacture of Serums, Vaccines and other pharmaceutical products in the Laboratory fitted up with all the modern up-to-date apparatus. The Company's Laboratory has in its possession a Biological firm of

**The Bengal
Immunity Ltd.**

their own where they have their own horses and animals for the preparation of fresh Sera.

During the short period since its foundation, the growth of the Laboratory under the management of Capt. N. N. Dutt since 1924 as Managing Director has been phenomenal.

The Laboratory has established connections with all the Scientific Institutions in India and abroad. The products are being regularly sent for being tested to Statens Serum Institute, Copenhagen S., Den &c. run under *League of Nations* from where the Company has received the highest praise for the sustained accuracy and high standard of their products.

The company owes its origin due to the efforts of the Savant Chemist Dr. Sir P. C. Ray, Kt., D.Sc., etc. In the year, it was started by a band of arduous workers and was laid out on an extensive plot of land and within a very short time earned a wide reputation through its products. The celebrated "*Nirmolin*"—an all-round perfect soap for bath and washing and which can only stand as equal to Sunlight Soap was the first of its kind to be manufactured in India by this Company. The Company also introduced first in the Indian market their Glycerine Soap "*Coral*" which has still been receiving public approbation and brought perfection in its machine-made toilet soaps. In one word, it was the then the biggest soap factory in India. In subsequent years, after a career of 7 years the company had to suspend its working till 1929, when a class of rich men came forward and financed the company with the result that the company was remodelled. Since then the company has been progressing from day to day and the wide experience they have gathered has been used for the further development of their soaps. The factory is equipped with the most upto-date machineries and plants and the manufacture is conducted by a body of experts who add wide practical experience and insight into Indian taste requirements to their high academic attainments. The Company

The Calcutta Soap Works.

manufactures commercial soaps, such as soft soap, Bar Soaps, Liquid Soaps etc.

The National Soap & Chemical Works Ltd. was a very old concern working as a cottage industry in a corner at Raja Dinendra Street in Calcutta and it was in 1931 that the present Managing Agents, Messrs. J. C. Dutt & Co., bought it over, extended the works, put in all latest types of plants and machineries and developed it to a full fledged uptodate modern Works to a point of perfection. It has its own chemist specially trained in several continental countries. It is an entirely Indian concern—ownership, management and labour are entirely Indian. The raw materials used are all Indian, excepting chemicals and essential oils, which are not made in India. The papers, printings, labels and boxes are all Indian.

**National Soap
and Chemical
Works Ltd.**

The monthly output of the concern before the present management took it over was hardly Rs. 1000/- a month, whereas its present average monthly sales are over Rs. 20000/-.

The Works manufacture all kinds of toilet and washing soaps, laundry, commercial and industrial soaps including soft, liquid, bar, insecticide soaps and soap flakes and powder. It also manufactures all kinds of toilet articles and hair dressings such as vanishing cream, cold cream, shaving stick, glycerine soaps, medicated soaps, tooth paste, hair oils, shampoo hair lotion, brilliantine, pomade, scents, lavender water, eau de cologne etc. It makes about thirty kinds of different toilet soaps to cater to the varying tastes of all grades of people—rich and poor. It has turned out soaps from one anna a cake to ten annas per cake.

All its products are boiled and milled. The works do not make any cold process or semi-boiled soaps. The factory has its own drying chamber, laboratory, refinery and filtration plant.

The greatest success of this factory is the Ajanta products—a wide range of various kinds of high class soap and toilet articles which are

greatly appreciated by the public—rich and poor. The glycerine and medicated soaps of this works also command wide sales.

The factory has a net-work of distribution centres in all parts of India. It has its branches at Dacca, Asansol, Jharia, Patna, Benares, Cawnpore, Lucknow, Delhi, Amritsar, Bombay, Madras, Rangoon and Ceylon.

The company was started by Late Dr. Mrigendra Lal Mitra, M.D. etc. more than 22 years ago. It changed hands in 1928. It is the First and Premier Works in India to manufacture Surgical Dressings—such as, Cotton Wool Absorbent, Bandages, Gauzes etc. and to distil Coal Tar to get different grades of Oils used in the manufacture of Disinfecting Fluids, Antiseptics etc. It possess upto-date Plants and Machineries for productions on commercial basis and also manufactures of Textile, Washing and Toilet Soaps of different qualities and various Toilet articles. Insecticides another item—was added to its list of manufactures which are generally known in the markets by “*Ladco Products*”.

The Lister Anti-septics & Dressings Co., (1928) Ltd.

Butto Kristo Paul, the founder of the firm was born in 1835. Just after the Sepoy Mutiny in 1857, Butto Kristo resolved to try his chance in the import of European drugs and medicines as a side line to his existing business.

B. K. Paul & Co. This shop may truly be said to have laid the foundation of the firm, which soon monopolized the drug-trade throughout the length and breadth of India, not to speak of Bengal.

The present head of the firm is Sir Hari Sankar Paul, Kt., the third son of Butto Kristo. His special contribution has been the manufacture in Calcutta of Indigenous Drugs on a large scale.

A. Bonded Laboratory.—Here pharmaceutical preparations are manufactured on an extensive scale, under the supervision of highly qualified experts. The B. P. preparations strictly conform to the

standards laid down in the Pharmacopœia, and every preparation is submitted to chemical and, where possible, biological standardisation.

B. Biological Laboratory at Dum Dum—is fully equipped with animal house, kymograph, respirator and—other equipments necessary for biological standardisation. At present a number of B. P. preparations such as those of Digitalis, Ergot, Aconite, Scilla, Strophentus and Canabis Indica etc. as also various Indigenous drugs such as Arjuna, Ephedra, Brahmi, Asoka, Abroma Augusta, Lodhea etc. are being standardised biologically.

C. Extraction of Alkaloids.—Extraction of Quinine from Indian Cinchona bark, Strychnine from the Nux Vomica seeds, Ephedrine from Indian Ephedra and Kurchi Alkaloids from Kurchi Bark are done in the Factory.

D. Experimental Drug cultivation—It has been started on a specified area of land at Dum Dum, by introducing high-altitude plants Indian or European and with plants from different provinces of India with a fair amount of success.

E. Manufacture of chemicals—These are being produced in the Chemical Laboratory : The chief ones are the B. P. Salts of Potash, Soda Citrate, Ferri Sulph, Copper Sulphate, Silver Nitrate, and similar preparations.

F. Commercial analysis of Seedlac, Shellac, Oils & Fats etc.

G. *Manufacture of Antiseptics and Surgical Dressings.*—Elaborate arrangements have been made for Tar distillation and for the utilisation of Creasote and Anthracene Oil obtained therefrom, in the manufacture of various kinds of disinfectants and wood-preservatives. Surgical cotton, Gauzes, Bandages and Dressings are also manufactured in this Department.

H. Besides the drugs of its own manufacture mentioned above, a huge amount of chemical drugs, Laboratory reagents, patent

medicines, Invalid foods, Surgical Instruments, Chemical Apparatus from foreign countries are imported and stocked here.

I. The workshop is fairly well-equipped; various kinds of medical, Surgical and Veterinary Instruments are manufactured here, repairs of old ones are also undertaken here.

The Calcutta Chemical Co., Ltd. was started in 1916 as a private company by Messrs. R. N. Sen, K. C. Das and B. Mitra, chemists.

The Calcutta Chemical Co., Ltd.	They first took up the manufacture of Yellow Prussiate of Potash and Sulphate of Iron by utilising waste products as available locally.
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Besides technical chemicals and soaps they are manufacturing a number of B. P. preparations special mention may be made of Pot. Citras, Soda Citras and Pot. acetate which they are the first to manufacture in India on a large scale.

They also undertook investigations of the various oils available in India and have found a special process of removing the disagreeable smell of Neem (Margosa) oil keeping its high medicinal properties intact and utilising this oil in the preparation of several well known toilet products which have won considerable reputation such as Margosoap, Neem Tooth Paste, Renuka (Margosia) toilet powder. They have also got several injections from this oil for skin diseases.

It must be mentioned that various attempts made in this direction in India and abroad before them were unsuccessful and the abundant supplies of Neem oil in India had no commercial utility.

The Company was converted into a public limited Company in 1920 and has now a paid up capital of about one and half lakhs of Rupees and employ more than 150 men.

They have got branches and depots in various parts of India and are the first Indian chemical concern to establish their branches outside India and are doing a fair amount of business in Malaya.

The factory is situated in a beautifully laid out garden-house in Dum Dum junction, in a short distance from the Dum Dum junction Railway station on the Eastern Bengal Railway. It lies on the Dum Dum Road leading to the Dum Dum Aerodrome, Jessop's Structural Workshop, and The Gramophone Factory and the old house which is said to have been occupied by Lord Clive,—all of which are worth a flying visit.

The Factory was started in 1927 by Mr. S. J. Savant, who hails from Boroda. He took to the industry at a very early age and has rendered it his devoted services ever since. He started the factory in 1927 with but a small furnace of 5 Pots of 200 lbs. capacity each, and began manufacturing bottles. In 6 months, he provided himself with the necessary equipment for grinding and began to manufacture Hurricane globes and other lamp-ware, in addition to Glass-stoppered jars. By this time he enlarged his furnace to one of 7 Pots of 600 lbs. capacity each. Other varieties of blown glass-ware were taken up in turn and the factory had to be gradually extended till at the present moment, it possesses no less than 3 furnaces of 9 Pots of 800 lbs. capacity each, employs a little over 200 labourers, skilled and unskilled and produces various glass articles of everyday utility and of artistic beauty, comprising Bottles, Globes Chimneys, Glass Jars, Electric fittings, Glass tubes and Rods. Its annual production now amounts to over rupees Two Lacks: Of the natural resources of India it annually consumes coal to the value of Rs. 10,000/- only, sand to the value of Rs. 5,000/- only, and salt-petre to the value of Rs. 4,000/- only.

Even so, thanks to the enviable reputation it has built up, it is still unable to meet the persistently heavy demand of its large circle of clientele so much so that with a view still further to extend its operation it has acquired a plot of land of its own measuring 20 Bighas, at Belghuria where it has very nearly completed its work of construction and piously hopes to begin operations before the year closes.

As long ago as the year 1897 two Bengali gentlemen, interested in the development of local industries, set up a small factory for the manufacture of biscuits on the site of the Company's present extensive Works.

The Britania Biscuit Co., Ltd.

At the beginning of the Great War, the whole resources of the Factory were placed at the disposal of Government, and during the years of the War very little else was manufactured except standard Army Ration biscuits for the Government. During this period, in order to increase their output, the Proprietors considered it necessary to convert their business into a limited Liability Company. With the fresh capital thus acquired, modern machinery was installed, and by the time the Armistice was declared, the Company were possessed of an up-to-date factory capable of producing the very highest standard of machine-made biscuits.

In 1924 the Company again increased their capital from 6 to 20 lakhs, acquiring considerably more machinery for Calcutta, and building an entirely new and up-to-date factory in Bombay.

The two Factories controlled by the Company now constitute the largest biscuit making concern in India.

The biscuits manufactured by the Company are from the finest materials, and no pains are spared in keeping the standard of production to the highest possible level. They are the only biscuit Manufacturers in India whose standard is equal to the best imported makes.

The India Electric Works Ltd. manufactures electric fans, telephone and telegraph instruments, Railway Signalling and Inter-locking Apparatus and Pole Fittings.

The India Electric Works Ltd.

It was established in 1924 and was reorganised in 1930 as a limited concern with Indian capital and management. They are turning out all sizes of high class electric fans for Ceiling and Table both for A.C. and D.C. Their chief brands are "INDIA" and

“ROHTAS” for D.C. ceiling, “BHARAT” for A.C. ceiling and “TARA” for A.C. and D.C. fixed and oscillating types of table fans. All these fans are approved by the Indian Stores Department, Government of India. The “INDIA” Patent design is of an outstanding merit and is famous for extremely low current consumption. They give slightly better breeze than the best known fans of similar sweep but consume only 33 per cent. to 42 per cent. electrical energy.

Their products for Telephone, Telegraph and Railway Signalling Instruments are equally good, and are being used in Railways and Public.

The film industry in India started with the exhibition side and the origin may rightly be traced to the great Industrial Exhibition held at Calcutta in 1906. It was the late Mr. J. F. Madan, the founder of the Madan Theatres Ltd. who started this business systematically. During the early stages very short pieces were shown and these again in tents, there being no permanent show-house. At that time they used to produce short features of topical interest with the help of foreign technicians.

Film Industry in Bengal.

The Aurora Cinema Co. was next started and produced only short features.

The production of full-length stories such as Nala-Damayanti, Dhruba-Charitra etc. by the Madan dates back to 1917-18.

By the middle of 1922 Indo-British Film Co. was started; this produced three pictures and succumbed owing to financial mismanagement. In the meantime Aurora had also produced one full-length picture.

In 1925 the Tajmahal Film Co. was started; it produced about four pictures and then stopped.

Photoplay Syndicate was next started but stopped after producing only one picture.

By 1926, British Industrial Film Co. came into the field and produced several pictures with a band of Indo-German workers.

In 1927 the Indian Kinema Arts started business and produced a number of pictures till about 1931. With the advent of the talkies however, they ceased production.

In 1928 the Arya Film Co. was started but stopped after producing one picture.

British Dominions Films Ltd. and Graphic Arts were started in 1929. The former produced four pictures and the latter three.

In 1930, the International Film Craft, financed by Mr. B. N. Sircar was brought into existence. This concern produced two pictures but survived only in name till 1932 when it changed its name to "The New Theatres Ltd." The latter opened a studio and began producing talkies in right earnest.

During 1930-31 Barua Pictures Ltd. was started and produced one silent picture. This concern was then equipped for producing talkies but it is now being used chiefly for rental purposes.

The Radha Film Co. was started in 1930, financed by Seth Radha Kissen Chamria with Mr. H. P. Banerjee as partner. It produced three silent pictures but then reverted to distribution and exhibition only. It became the owner of Madan talkies and some studio equipment including Cinematograph Cameras in exchange of a part of the money lent by it to the Madans. From the beginning of 1933, it is producing talkies. This concern, has been one of the pioneers in the realm of film industry. It has struck out a new path in offering facilities for research work in its sound laboratory. It is also gratifying to learn that it has been absorbing fresh talents from our university. Regarding its production, it has, along with a few other local studios, heralded a new era in the domain of talking film.

In 1932, the East India Film Co. and Bharat Lakshmi Pictures Ltd. came into being and started producing talkies.

The Indian Film Industries Ltd. began its career in 1933 but subsequently changed its name to Kali Films Ltd.

In 1933, the Pioneer Films Ltd. was also started; it began dubbing Indian dialogues and songs on foreign films and lately took to producing their own talkies.

In 1934, Keshari Films and Hindusthan Sound Studios Ltd. have been started but they have yet to release any picture in the market.

The working and present annual output of the existing concerns may be roughly estimated from the following figures :—

Concern.	No. of Directors.	No. of Studios.	Average No. of pictures per year
Madan Theatres Ltd.	.. 6	3	12
New Theatres Ltd.	.. 5	4	9
East India Film Co.	.. 4	2	8
Radha Film Co.	.. 3	1	5
Kali Films Ltd.	.. 2	1	4
Bharat Lakshmi Pictures Ltd.	3	2	5
Pioneer Films Ltd.	.. 3	2	4
Barua Pictures Ltd.	.. 1	1	1

The sway of Indian Films in Bengal is unquestioned. They have not been sedulously playing the ape to the west. Their most attractive feature is the blend therein of Indian themes with Indian music. They are redolent not only of the ancient mythology, but also of modern civilization. They represent Indian life in its manifold phases—'its brilliant sunshine, its weeping gloom'. It is therefore not surprising to find that they are much more in demand than the western films. Indeed they now occupy a commanding position as a national industry. A comparison, however, with the American and other productions would be premature. The film industry is still in its infancy in this country—the talkies being produced since only about three years. Still it can be safely asserted that the American standard will be reached within a short time, provided the present rate of progress be steadily maintained.

APPENDIXES.

I

TOTAL TRADE OF THE PRINCIPAL PORTS

In Lakhs of Rupees.

PORT	PRE-WAR AVERAGE	WAR AVERAGE	(1927-28)	(1928-29)	(1929-30)
Calcutta	— 1,59,78 ...	1,62,50 ...	2,54,29 ...	2,60,22 ...	2,40,23
Bombay	— 1,45,45 ...	1,58,37 ...	2,15,52 ...	2,22,91 ...	2,11,73
Rangoon	— 48,96 ...	51,54 ...	1,03,64 ...	90,77 ...	94,19
Karachi	— 47,87 ...	46,88 ...	71,89 ...	74,46 ...	66,47
Madras	— 19,61 ...	21,15 ...	47,75 ...	52,03 ...	50,63
Cochin	— 6,28 ...	5,60 ...	11,54 ...	12,00 ...	11,54
Tuticorin	— 7,23 ...	7,55 ...	11,31 ...	11,87 ...	11,60
Chittagong	— 7,47 ...	6,93 ...	18,33 ...	15,20 ...	12,92

II

DETAILS OF TRADE OF CALCUTTA & CHITTAGONG

In Lakhs of Rupees.

CALCUTTA

	PRE-WAR AVERAGE	WAR AVERAGE	(1927-28)	(1928-29)	(1929-30)
FOREIGN—					
Imports	— 55,84 ...	57,25 ...	83,59 ...	86,66 ...	81,31
Exports	— 85,22 ...	87,85 ...	1,38,38 ...	1,37,52 ...	1,27,03
<i>Total</i>	— 1,41,06 ...	1,45,10 ...	2,21,97 ...	2,24,18 ...	2,08,34
COASTING—					
Imports	— 8,94 ...	10,55 ...	17,99 ...	20,97 ...	18,56
Exports	— 9,78 ...	6,85 ...	14,33 ...	15,07 ...	13,39
<i>Total</i>	— 18,72 ...	17,40 ...	32,32 ...	36,04 ...	31,89
TOTAL—					
Imports	— 64,78 ...	67,80 ...	1,01,58 ...	1,07,63 ...	99,81
Exports	— 95,00 ...	94,70 ...	1,52,71 ...	1,52,59 ...	1,40,42
<i>Total</i>	— 1,59,78 ...	1,62,50 ...	2,54,29 ...	2,60,22 ...	2,40,23

CHITTAGONG

		PRE-WAR AVERAGE		WAR AVERAGE	(1927-28)		(1928-29)		(1929-30)	
FOREIGN—										
Imports	—	79	...	57	...	2,82	...	2,35	...	2,07
Exports	—	4,92	...	3,22	...	8,70	...	7,39	...	6,64
Total	—	5.71	...	3,79	...	11.52	...	9,74	...	8,72
COASTING—										
Imports	—	99	...	2,49	...	5,45	...	4,27	...	3,11
Exports	—	77	...	65	...	1,36	...	1,19	...	1,10
Total	—	1,76	...	3,14	..	6,81	...	5,46	...	4,21
TOTAL—										
Imports	—	1,78	...	3,06	...	8,27	...	6,62	...	5,18
Exports	—	5,69	...	3,87	...	10,06	...	8,58	...	7,74
Total	—	7.47	...	6,93	...	18,33	...	15,20	...	12,92

III

IMPORTS INTO BENGAL

In Thousands of Rupees.

COUNTRIES	(1926-27)	(1927-28)	(1928-29)	(1929-30)
United Kingdom	— 46,12,61 ...	50,04,54 ...	46,27,64 ...	41,84,94
Aden & dependencies	— 36,22 ...	50,96 ...	46,34 ...	41,31
Straits Settlements	— 2,74,90 ...	2,35,97 ...	2,32,41 ...	2,99,67
Hongkong	— 19,37 ...	12,46 ...	9,84 ...	9,72
Egypt	— 24,64 ...	29,48 ...	25,23 ...	15,62
Mauritius & dependencies	4 ...	46 ...	26 ...	15
Canada	— 31,56 ...	19,04 ...	70,73 ...	56,16
Australia	— 89,17 ...	79,95 ...	4,99,34 ...	2,70,54
Russia	— 16 ...	9,52 ...	39,10 ...	35
Germany	— 4,28,11 ...	3,88,06 ...	4,13,94 ...	4,11,47
France	— 77,49 ...	81,93 ...	81,03 ...	81,24
Belgium	— 1,49,25 ...	1,46,49 ...	1,71,39 ...	1,75,65
Italy	— 1,42,66 ...	1,69,49 ...	1,63,08 ...	1,61,39
Austria and Hungary	— 23,77 ...	23,38 ...	32,47 ...	25,20
Java	— 7,35,96 ...	6,28,68 ...	6,49,73 ...	5,87,83
Borneo	— 68,85 ...	1,26,48 ...	1,10,78 ...	95,40
China	— 14,18 ...	61,01 ...	89,18 ...	86,79
Japan	— 4,98,58 ...	5,31,33 ...	5,97,53 ...	8,18,50
U. S. of America	— 5,83,96 ...	5,89,48 ...	5,27,72 ...	5,27,98
Other Countries	— 3,56,13 ...	4,52,20 ...	5,13,15 ...	4,87,74
Total	— 81,67,61 ...	86,40,91 ...	89,00,89 ...	83,37,65

Total for 1930-31 ... 51,20,97.

IV
EXPORTS FROM BENGAL
In Thousands of Rupees.

COUNTRIES	(1926-27)	(1927-28)	(1928-29)	(1929-30)
United Kingdom	— 34,42,53 ...	40,98,75 ...	33,35,96 ...	32,93,79
Ceylon	— 1,71,76 ...	1,66,17 ...	1,55,38 ...	1,76,28
Straits Settlements	— 2,12,20 ...	2,19,52 ...	1,75,47 ...	1,60,53
Hongkong	— 1,54,06 ...	1,67,96 ...	1,85,69 ...	2,23,73
Egypt	— 1,47,48 ...	1,55,14 ...	1,65,41 ...	2,29,01
Mauritius etc.	— 85,48 ...	79,33 ...	85,03 ...	79,66
Canada	— 1,98,62 ...	2,07,87 ...	2,27,80 ...	2,24,51
Australia	— 7,34,55 ...	6,00,60 ...	7,00,63 ...	5,54,42
Russia	— 9,11 ...	48,55 ...	24,13 ...	33,26
Germany	— 9,85,29 ...	12,40,28 ...	12,43,12 ...	10,11,34
Belgium	— 3,19,06 ...	2,81,96 ...	3,60,00 ...	3,33,03
France	— 5,25,60 ...	5,45,40 ...	5,62,51 ...	5,60,33
Spain	— 1,42,75 ...	1,67,66 ...	1,78,41 ...	1,74,48
Italy	— 2,38,10 ...	2,36,01 ...	2,88,00 ...	2,64,57
Java	— 2,46,29 ...	2,07,50 ...	2,80,15 ...	2,07,29
Indo-China	— 1,52,05 ...	1,54,30 ...	1,36,19 ...	1,19,02
China (excluding Hong- kong and Macao)	— 66,48 ...	79,53 ...	1,18,29 ...	67,74
Japan	— 3,81,05 ...	3,82,99 ...	4,15,00 ...	3,83,97
U. S. of America	— 28,97,66 ...	30,37,16 ...	31,96,88 ...	28,76,03
West Indies	— 2,76,45 ...	2,80,53 ...	3,00,08 ...	2,52,41
Other Countries	— 20,21,42 ...	22,80,21 ...	22,97,20 ...	21,09,76
Total	1,34,07,99	1,46,37,42	1,44,31,33	1,33,11,26

Total for 1930-31 — 86,31,75

V

NUMBER OF FACTORIES IN AND NEAR CALCUTTA

		Calcutta.	24-Par- ganas.	Howrah.	Hooghly.	Added in 1931.	Total.
Cotton Mills	...	3	8	3	+ 1	15	
Hosiery	—	4	6	1	...	+ 1	12
Jute	—	...	54	23	15	+ 2	94
Silk	—	...	2	...	...	...	2
Wool	—	...	1	...	...	...	1
Textile (Misc.)	...	1	...	...	...	...	1
Match	—	...	15	...	...	+ 1	16
Gramophone	...	1	...	...	...	...	1
Leather & Tannery	...	2+6	...	...	...	...	8
Glass	—	1	3	3	...	+ 2	9
Soap	—	...	4	...	...	+ 2	6
Tobacco	—	1	1	2	...	...	4
Biscuits etc.	2	5	...	...	...	...	7
Rice	—	...	151	...	30	+ 2 + 10	193
Flour	—	2	2	5	...	...	9
Oil Mills	—	28	18	10	1	+ 1 + 1	59

		Calcutta	24 Parganas	Howrah	Added in 1931	Total
Lac	—	...	4	3	...	7
Paper & Board	...	3+1	...	...	...	4

VI

**NUMBER OF JUTE MILLS, LOOMS, SPINDLES ETC.
IN BENGAL**

Year	No. of Jute Mills			Looms (Hessian) (Sacking)			Total Locms	Spindles in thousands		Persons employed —daily average in thousands		
1930	—	89	...	36,245	...	21,894	...	58,639	...	—	...	—
1929	—	87	...	31,534	...	19,502	...	51,036	...	10,85	...	3,37
1928	—	87	...	31,184	...	19,337	...	50,521	...	10,84	...	3,29
1927	—	87	...	31,001	...	19,353	...	50,354	...	10,61	...	3,27
1926	—	85	...	31,307	...	18,541	...	49,848	...	10,49	...	3,27
1925	—	85	...	31,055	...	18,344	...	49,399	...	10,54	...	3,37
1924	—	84	...	24,732	...	18,286	...	48,018	...	10,30	...	3,26
1923	—	77	...	28,111	...	17,452	...	45,563	...	—	...	—
1922	—	77	...	24,985	...	16,445	...	41,339	...	8,97	...	2,85
1921	—	72	...	24,453	...	16,445	...	40,898	...	8,63	...	—
1920	—	72	...	24,353	...	16,124	...	40,477	...	8,63	...	—

VII

EXPORT OF JUTE AND JUTE MANUFACTURES

Year.	Raw Jute, Tons.	Bags, No. in thousand.	Cloth— yards in thousands. (Hessian)	(Sacking)	Twist & yarn, lbs. in thou- sand.	Total value of exports in rupees in thousands.
1931-32 —	586,618 ...	389,108 ...	995,154 ...	25,339 ...	8,669 ...	33,11,25
1930-31 —	619,705 ...	434,046 ...	1,238,619 ...	32,381 ...	7,341 ...	44,77,91
1929-30 —	806,884 ...	522,291 ...	1,598,844 ...	51,682 ...	6,009 ...	79,10,06
1928-29 —	897,863 ...	497,685 ...	1,503,323 ...	64,971 ...	4,801 ...	89,25,41
1927-28 —	891,907 ...	463,140 ...	1,477,783 ...	74,968 ...	6,318 ...	84,22,69
1927-26 —	707,782 ...	449,090 ...	1,422,547 ...	80,581 ...	3,078 ...	79,96,13
1925-26 —	647,154 ...	425,083 ...	1,400,017 ...	61,364 ...	1,724 ...	96,78,55
1924-25 —	696,000 ...	425,141 ...	1,394,422 ...	61,866 ...	1,261 ...	80,85 96
1923-24 —	659,963 ...	413,716 ...	1,294,591 ...	54,151 ...	5,345 ...	62,28 42
1922-23 —	577,955 ...	344,232 ...	1,211,862 ...	42,490 ...	3,507 ...	63,02,27
1921-22 —	467,685 ...	386,711 ...	1,096,562 ...	24,006 ...	1,876 ...	44,04,49
1920-21 —	472,414 ...	533,908 ...	1,352,739	...	10,179 ...	69,35,56
1914-15 to	512,400 ...	665,659 ...	1,156,113	...	2,680 ...	74,71,50
1918-19	838,500 ...	368,759 ...	1,061,151	...	155 ...	59,10,01
1913-14 —	706,200 ...	360,880 ...	940,101	...	265 ...	32,48,49
1910-11 —	708,400 ...	202,908 ...	365,214	...	2,224 ...	20,50,87

PUBLIC UTILITIES SERVICES.

The Calcutta Tramways Company was originally formed in 1880 and, under an Agreement with the Corporation the following lines were constructed and brought into use on the dates noted against each :—

Sealdah	...	...	January	1881
Chitpore	...	...	March	1881
Chowringhee	...	...	November	1881
Dhurrumtollah	...	...	March	1882
Strand	...	...	June	1882
Shambazar	...	...	November	1882
Kidderpore	...	...	December	1883
Wellesley	...	...	January	1884

The gauge of the original tramways was 3 ft. 3 $\frac{3}{8}$ ins. and there was a very considerable quantity of single line with passing stations. The original system was almost entirely horse-drawn. On the Kidderpore line a Steam Tractor was however used but the use of the steam engine was stopped after 5-30 P.M. The tramcars in the City were drawn by horses.

In 1900 a further Agreement was entered into with the Corporation under which the Company undertook to electrify certain lines and convert the whole of the trams to standard tram gauge.

Between 1903 and 1908 the Tollygunge, Belgatchia, Baghbazar with short extensions via Gailiff Street, Harrison Road, Circular Road, Alipore & Behala sections were opened, and the Howrah Tramway System was also brought into existence. Between 1910 and 1925 the Rajabazar and Park Circus extensions have been made and in 1928 Ballygunge extension better known as Rash Behari Avenue Extension was opened.

In all, excluding sidings, sheds and service lines Company operates approximately 40 miles of double line, and at the present time carries approximately 100 million passengers a year or turns over the population of Calcutta in about 5 days. To do this the Company employs a staff of approximately 7000 Indians, of which 1200 are employed in the Company's Workshops and Power Stations at Nona-pooker & Howrah. The Company now purchases its power from the Calcutta Electric Supply Corporation, thus following the policy long prevalent on the Continent of concentrating Power Stations. The number of cars in daily service are 260 Trains for Calcutta and 23 cars for Howrah.

The Company have recently taken in hand the replacement of their old rolling-stock, and are gradually placing on the road smart and comfortable new articulated cars making for extremely smooth running, the first class compartments being provided with electric fans—a luxury hitherto unknown in any street passenger vehicle in India, or, for that matter in the World.

In the year 1895 the Government of Bengal passed the Calcutta Electric Lighting Act. Shortly after the passing of this Act an application was made to Government for a License, and on the 7th January, 1897, "The Indian Electric Company, Ltd." was formed to take over the Calcutta Electric Lighting License, 1896, which had been granted by Government.

**The Calcutta
Electric Supply
Corporation,
Ltd.**

This first License was for a period of 21 years from the 29th December, 1896 and covered an area of 5.64 square miles. At the time, 21 years was the longest period for which a License could be granted under the Act.

The Indian Electric Company was registered in London with a nominal Capital of £1,000, but in February, 1897 it was resolved to change the name of the Company to "The Calcutta Electric Supply Corporation Ltd." and to increase the Capital to £100,000. A prospectus was issued in May, 1897, and the whole of the Capital was over-subscribed on the day of issue.

It was decided to commence operations on a tentative and moderate scale in order to test what the possible demand might be for electric current, and accordingly a Contract was entered into with Messrs. Crompton & Company, Limited, to erect and equip a single Generating Station with plant of 1,000 Kilowatts capacity, capable of dealing with a initial demand for supplying current to about 60,000 carbon filament lamps of 8 candle power, and to provide and lay all the mains required in the compulsory area as set out in the License, for the sum of £65,000. This was to include the actual expenses incurred in obtaining the License, estimated at £3,000, which was the only payment made by the Company for the License. There was no promotion money.

Following the most up-to-date practice in England at that time, it was decided to adopt the "Three-wire system" of distribution generating and delivered Direct Current to Consumers at 450 and 225 volts pressure. The Generating Station was erected on a centrally-situated plot of land in Emambagh Lane, and was equipped with "Crompton" Dynamos, "Willans" Engines, and "Babcock and Wilcox" Boilers. The supply of current from this station was commenced on the 17th April, 1899.

Conductors for distributing the current from the Generating Station to consumers were partly underground and partly overhead. Underground cables were laid in main streets and more thickly-populated districts, and overhead wires erected in the outskirts—the general idea being to replace the overhead lines by the more costly underground cables as the demand grew and the load became assured, moving the overhead wires further out.

When the business was started it was thought that possibly electric energy might be used for ventilating and power purposes, as well as for lighting, but no one imagined that the days of the hand-pulled Punkah were numbered, and that the electrically-driven Fan was destined to overcome the terrors of the hot weather in Calcutta.

Such, however, was the case, and the popularity of the Electric Fan, as soon as it was introduced to public notice, ensured the immediate prosperity of the Company, for it provided, at least during a great part of the year, the "day load" which is so essential to the economical working of an Electricity Supply Station. As evidence of this, the Company was able to pay a dividend of $3\frac{1}{2}$ per cent. for 1900, the first year after commencement of supply.

The demand for current for Fans as well as for Lights at once showed that the supply of electrical energy met a real public want, and it was soon found that the single Station at Emambagh Lane, generating Direct Current, as originally planned, was quite inadequate to deal with the constantly increasing requirements of the community. This station had therefore to be enlarged from time to time, and the distributing mains extended. Additional Generating Stations, in different parts of the area covered by the License, equipped on similar lines to the first Station, were erected and opened, as under :—

Alipore, in March, 1902, with a capacity of ... 750 KW.

Ultadanga, in September, 1906, capacity of ... 1,200 KW.

Howrah, in May, 1906, with a Gas Suction
Plant to supply 165 KW.

As the demand for electric current continued to grow, it became necessary to obtain further Licenses from the Government of Bengal to permit of the supply to additional areas. The original License already referred to, dated 1896, covered an area of only 5.64 square miles, while the area for which Licenses are now held is well over 123 square miles.

At the end of 1925 there were 520 miles of underground, and 302 miles of overhead mains—a total of 822 miles. Since then the Company has made considerable progress in its business.

BROADCASTING STATION AT CALCUTTA.

Broadcasting in India was originally started by the Indian Broadcasting Co. Lt.,—a private concern,—in the year 1927 with Stations at Calcutta and Bombay, transmitting on 370·4 and

Early History. 357·1 metres respectively. But unfortunately, an unbroken succession of annual deficit budgets drove the Company into liquidation in 1930. At this critical moment, the Government of India entered the field and on acquiring the Company's assets continued to administer the enterprise as the Indian State Broadcasting Service under the control of the Hon'ble Member for Industries and Labour. In 1931, Retrenchment Sub-Committee were appointed to review the entire financial position of the Government of India and Broadcasting with its deficit Budget stood out in the general atmosphere of retrenchment and economy as a concern calling for the pruning knife. But fortunately, the Government of India, after serious deliberations, finally decided to continue Broadcasting. In the year 1933-1934 (for the first time in the history of Indian Broadcasting) its Revenue, mainly derived from Licences and Custom duties on imported Radio goods, showed a profit over total expenditure, and now that it is financially on a firm ground, the Government of India have under consideration an early extension of the service.

Broadcasting Station at Calcutta comprises the two main centres, viz :—(I) The Offices, Studios and Control Room at No. 1, Garstin Place, Calcutta, and (II) The Transmitting Station at Cossipore (No. 35-1, Paikpara Road).

(I) The Offices, Studios etc. being centrally situated, are easily and conveniently accessible to the artists as well as the general public. The studios are accoustically perfect and are fitted with microphones, musical instruments, light indicators, sound-effect devices, etc. Attached to the Studios is the Control Room, fully equipped with "A" and "B" Audio-Frequency Control Apparatus, the function of which is to repeat to the Transmitting Station at Cossipore through telephone lines a faithful and distortion-

**Broadcasting
Station at
Calcutta.**

less reproduction of currents generated in the microphone at a power level sufficiently high fully to modulate the Transmitter.

(II) The Transmitting Station at Cossipore: For the radiation of signals into space, simultaneously or separately on long and short waves, (370.4 and 49.1 metres) two transmitting plants are maintained at this centre.

The long wave Plant is a Marconi "Q" type Broadcast Transmitter having a total input of 12 KW. It comprises Drive, Magnifier and Modulator units. The filament heating current is obtained from a 6 KW. L.T. Generator driven off the 450-volt Supply Mains. H.T. voltage of the order of 10,000 D.C. for the plates of the valves is obtained from a 12 KW. Alternator and step-up transformer and finally by a process of valve rectification.

The arrangement for modulation is choke control or constant current system. The aerial used is a cage "T" supported on two Bylander Towers—150 ft. high.

The shortwave plant is one which was locally built by the Station Director and the engineers at the Calcutta Station in 1933. It has an aerial power of 300 watts and consists of drive, separator, magnifier and modulator circuits. The process for obtaining H.T. and L.T. for the valves is the same as described in the longwave plant. The system is choke-control modulation and a horizontal aerial with feeder system is used for the radiation of energy.

The programmes transmitted by the Calcutta Station may be mainly classified into Indian and European.

Indian. The Indian programmes comprise items in Bengali, Urdu and Hindusthani. Vocal and instrumental music, gramophone records and relays of interesting matters from clubs and public halls are generally arranged for the entertainment of the listeners. The Station has its own Dramatic Section popularly known as the Betar Natukey Dal for performance of studio plays. Special subjects for ladies and children are regularly

broadcast in Mahila-Majlish and children's hour respectively. Broadcast of educative "talks" by prominent speakers, and rural uplift are special features of the Station's programme.

European. European programme time occupies a smaller proportion of the whole than the time allotted to the Indian Section and the programmes are composed of Studio concerts, orchestral relays and other items from the principal hotels, restaurants etc. in Calcutta. These are supplemented by occasional relays of Empire programmes transmitted by the Empire Station at Daventry, and also recorded London Studio programmes specially selected by the British Broadcasting Corporation for reproduction and use in the Dominions and Colonies.

THE PLACES OF INTEREST AND SOME GENERAL INFORMATION.

The Victoria Memorial takes its place as one of the great buildings of the modern world. Standing in its own grounds, west of the Cathedral, on the site of the old Presidency Jail, it dominates southern Calcutta. To Lord Curzon its conception is due, as a treasure house wherein are displayed a collection of pictures, statues, historical documents and other objects of interest illustrative of Indian history and especially of that of the Victorian era. The funds for its construction, amounting to seventy-six lakhs of rupees, were voluntarily subscribed by the Princes and Peoples of India. The architect was Sir William Emerson, and the work was entrusted to Messrs. Martin & Co., of Calcutta, who executed it under the supervision of Mr. V. J. Esch, C.V.O., the Superintendent Architect. His Imperial Majesty King George V., when Prince of Wales, laid the foundation-stone on the 4th January, 1906; and H. R. H. the Prince of Wales, on the 28th December 1921, formally opened the building. The design is chiefly Renaissance in character, though traces of Saracenic influence can be discerned. The exterior is of polished marble quarried at Makrana in the State of Judhpur, where for many years the builders maintained an extensive plant and an army of workmen to provide the necessary material. The ornamental groups of statuary over the entrance porches and figures surrounding the dome were designed and executed in Italy.

The figure of Victory, standing 16 ft. high and weighing 3 tons, surmounts the dome, and revolves upon its own base, a sphere 2 ft. in diameter. From the ground level to the base of the figure of Victory is 182 ft. The dimensions of the hall itself at the corner towers are 339 ft. by 228 ft.

Entering by the northern door the visitor will find busts of King Edward VII. and of Queen Alexandra and statues of King

George V. and of Queen Mary in the hall. The model of the Memorial is interesting as showing the completed design with the corner towers surmounted by the cupolas, which have yet to be erected. The antique clock is a fine specimen by Whitehurst of Derby (F.R.S., 1713-1788).

To the right, in the Royal Gallery, is a collection of paintings representing events in the life of Queen Victoria, the gift of King Edward VII. Queen Victoria's piano and writing-desk occupy the centre of the room, while on the south wall hangs Verestchagin's masterpiece, depicting the State entry of King Edward VII. when Prince of Wales into Jaipur in 1876. This exhibit, which was presented by the Maharaja of Jaipur, should on no account be missed, as it is one of the finest works of art in Calcutta, if not in India.

On the opposite side of the entrance hall a collection of Persian books will be of interest to the antiquarian, and among the pictures on the walls will be found portraits of Holwell (by Reynolds), of Lord Clive (after Dance, R.A.), of the King of Oude and the Nawab of Arcot, both presented by H. M. the King Emperor, of Dwarka Nath Tagore (1795-1846, a notable of Bengal, whose enlightenment was in advance of his time), of Sir Henry Rawlinson (1810-1894), of Lord Lake (1744-1808), and of Maj.-Gen. Stringer Lawrence (by Reynolds), the bequest of the late Marquess Curzon of Kedleston, K. G. The statues in the corners are of Lord Wellesley and of Lord Dalhousie, while that in the centre is of Lord Hastings (by Flaxman, R.A.).

Passing through the Queen's vestibule into the Queen's Hall under the dome, one sees the dignified statue of Queen Victoria at the age when she ascended the throne (the work of Sir Thomas Brock, R.A.); this gives the key-note to the whole edifice. On the marble panels in the recesses of the walls are engraved in several languages proclamations to the people of India by Queen Victoria, while the mural paintings encircling the gallery (by Frank Salisbury) illustrate the principal events of her lifetime. These will be better seen across the hall from the gallery itself.

The bronze doors on the two sides of the Queen's Hall are fine example of modern workmanship, and beyond them on the terraces

are groups of statuary, with Lord Cornwallis (by John Bason, jr.) as the central figure of the one (on the east) and Warren Hastings (by Sir Richard Westmacott, R.A.) as the central figure of the other (on the west).

Continuing through the building we come to the Princes' Hall. The statue of Lord Clive, a replica of that (by John Tweed) which stands outside the India Office in London, and two French guns captured at the Battle of Plassey are the principal objects on view, besides the busts of distinguished men which here find a place.

On the left is the Darbar Hall, undoubtedly the finest hall in the building. The War enforced economy, and the change from marble to Chunar stone enhances greatly the general effect. The Art collection comprises Miss Eden's water-colour sketches, Atkinson's mutiny drawings, miniatures on ivory, engravings, and a fine collection of Oriental paintings. Philatelists will ask to be shown the stamp collection, while others will be interested in the last uniform worn by King Edward VII. On the dais at the east end of the Hall stands the Stone Throne or Musnad of the Nawabs-Nazim of Bengal, an exhibit of considerable historical interest, dating from 1641, according to the inscription.

Across the Princes' Hall is one of the Picture Galleries, containing pictures and engravings by Thomas Daniell (1749-1840, R.A.), and his nephew William (1769-1837, R.A.). Among these, the collection presented by Queen Mary is of considerable interest. Other paintings include portraits of Abu Taleb Khan by Northcote, Sir Elijah Impey by Kettle, Rudyard Kipling by Burne Jones, Burke and Macaulay, also "The Embassy of Hyder Beck" and "Lord Cornwallis receiving the son of Tippoo Sahib," by Zoffany. The models of the Battle of Plassey and of an East Indiaman sailing ship, and the collection of arms and armour supply a variety of interest.

The visitor should now proceed to the Picture Gallery on the first floor, where he will find a collection of paintings of the time of Warren Hastings. These include portraits of Warren Hastings and

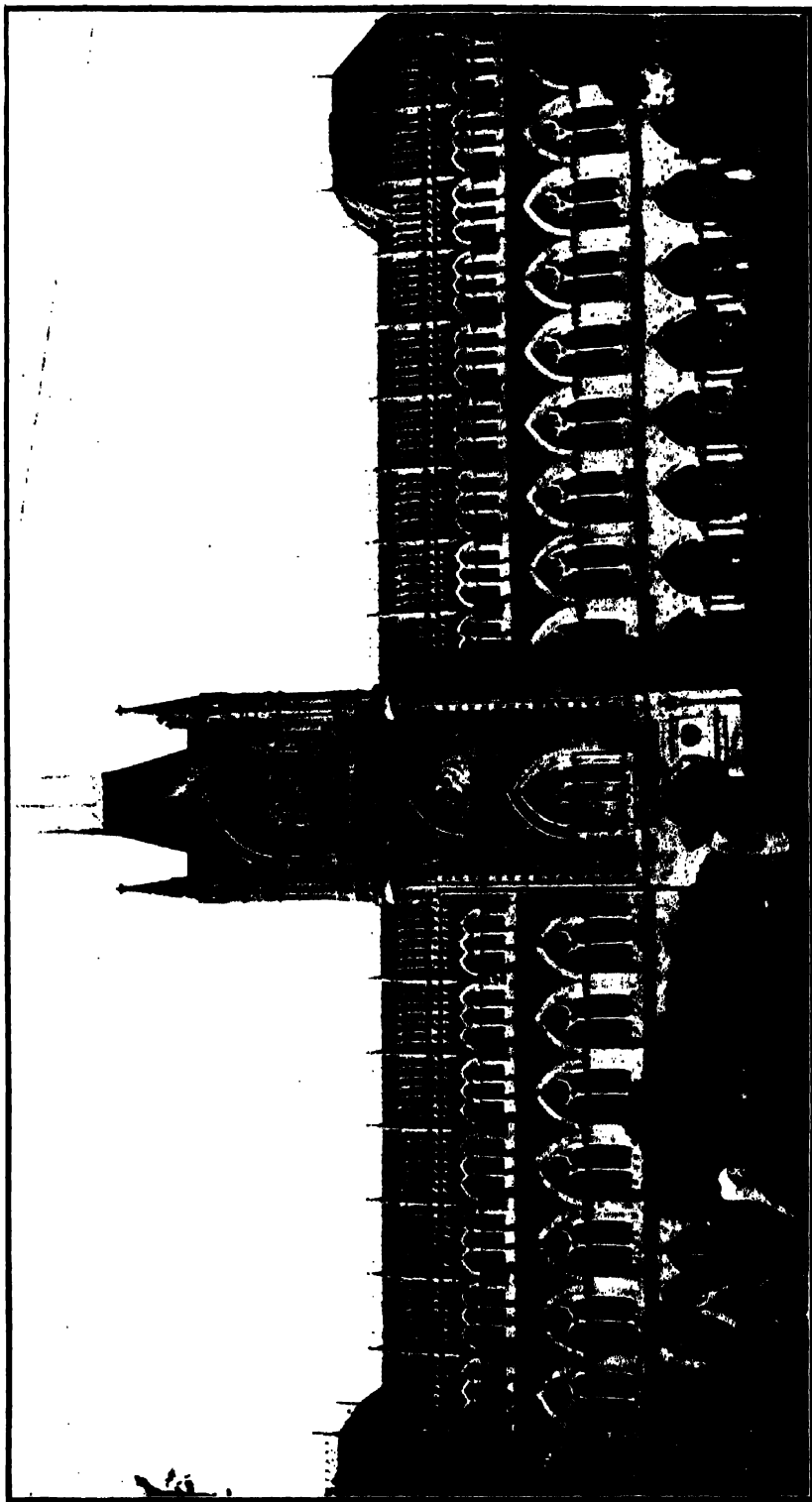
of Mrs. Hastings in a group, and a very fine one of Mrs. Hastings, all by Zoffany, a portrait of the former by Lemuel Abbott, and another attributed to Hoppner. The centre room contains a large collection of engravings and medals, while in the "Calcutta" room at the end, among others, will be found Daniell's prints of Old Calcutta and a model of Fort William. Two fine oil paintings by Thomas Daniell, one representing Old Court House Street as seen in 1780, the other depicting a scene on the Hooghly with the present Fort William in the distance, should not be missed.

Among the historic documents in the annexe is the original indictment of Nand Coomar for forgery of the bond, which is also on view in original.

A tour of the Gallery round the interior of the dome should be made to view the mural decorations, and those who wish to do so may ascend to the top of the dome. As the door leading to the dome is kept locked, application should be made to the Superintendent at his office in the entrance hall on entering the building. The echo in the space between the outer and inner domes, and the whispering gallery inside the circumference of the dome, are both remarkable instances of these phenomena.

In the grounds will be found, on the south the King Edward VII. Memorial Arch by Mackennal, A. R. A., and a Turkish gun captured in Mesopotamia. The statue of Lord Curzon is the work of Pomeroy, R.A. On the north the bronze statue of Queen Victoria is by Frampton, R.A., and the surroundings of the statue and the entrance gates were designed by Mr. V. J. Esch, C.V.O.

The Memorial is open on Sundays and week-days (excluding Mondays) from 10 A.M. to 5 P.M. (4 P.M. during the winter months). On Fridays there is a charge of 8 annas, which admits to the whole building. On other days entrance is free, but a charge of 4 annas is made to view a part of the collections. On Mondays the building is closed to visitors.



HIGH COURT

A little to the west of the Town Hall and almost at the junction of Esplanade west with the Strand Road stands the High Court, an imposing building in the gothic style.

The High Court. The foundations were laid in March, 1864, and construction completed in May, 1872. The building occupies the site of the old Supreme Court, which was erected between 1780 and 1784, and of three private residences. Its main facade is on the south and looks upon the esplanade and the Maidan. A grand colonnade runs along the lower storey. In the centre of the facade is a massive tower 180 feet high, from which a good view of the Maidan is obtained. Under the tower is the principal entrance which leads to a quadrangle enclosing a garden and a fountain. On the ground floor are various offices and a barred room in which the prisoners awaiting their trial at the Sessions are detained. On the first floor are the Courts, the Judges' private rooms, the Judges' Library, the Bar Library, the Pleaders' and the Attorneys' Libraries and the offices of the Registrars on the Appellate and Original sides. On the upper floor are offices of the Clerk of the Crown, the Court Receiver and the Legal Remembrancer, the barristers' luncheon-room and the Advocate-General's chambers.

It is situated on the Esplanade, to the west of the Government House. The building was completed in 1813. The Town Hall is an imposing building, in the Doric style, with a

The Town Hall. flight of steps leading to the grand portico on the south. The building consists of two storeys and is chiefly used for public meetings. The great hall which runs from end to end of the upper floor of the building is 172 feet in length and 65 feet in width. The building contains many excellent collection of portraits and statues.

**Writers'
Buildings.**

It occupies the whole length of the Northern side of the Dalhousie Square. The building, houses the Bengal Secretariat offices, were taken over by the Government in 1780,

This handsome building is situated on the west side of the Dalhousie Square. It was completed in 1868, and occupies part of the site of the old Fort of Calcutta. The building has a large white dome which forms the roof of a round hall where stamps are sold to the public.

**The General
Post Office.**

The Mint is situated on the Strand Road. There are really two Mints, the Silver and the Copper Mints. The former took six years to build and was opened in 1831. The architecture is Grecian Doric and the central portico facing the Strand was a copy of the Temple of Minerva at Athens. The Copper Mint consists of a large block of buildings. It was opened in 1865. The Mint can stamp off nearly 20,000,000 rupees every day, if necessary.

The Mint.

It stands on the Maidan near Chowringhee. It is a fine column 152 feet in height, and a good view of the city may be had from its summit. The keys are with the Commissioner of Police, and can be obtained on application. The Monument was erected in 1828 in honour of Sir David Ochterlony who fought against Nepal more than a hundred years ago.

**The Ochterlony
Monument.**

It is also known as Sir Stuart Hogg Market. The market stands on Lindsay Street. It was built in 1874, but has since been considerably extended. It has about 5,000 well-arranged stalls.

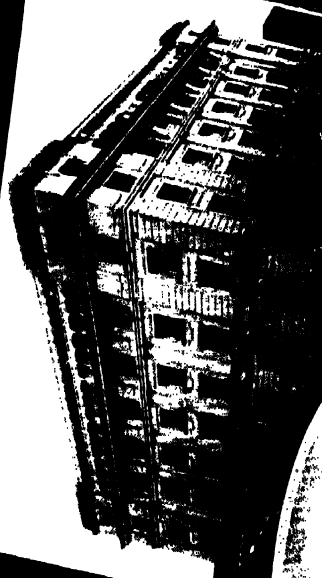
The New Market.

**The Zoological
Gardens.**

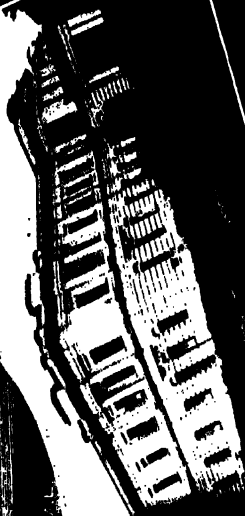
The Zoological Gardens at Alipore contain an extensive collection of animals, birds, reptiles, etc. It was opened to the public in 1876. It is well worth a visit.

**St. John's
Church.**

It stands retired from the road at the corner of Council House Street and Hastings Street. It was the cathedral of the settlement from 1815 to 1847.



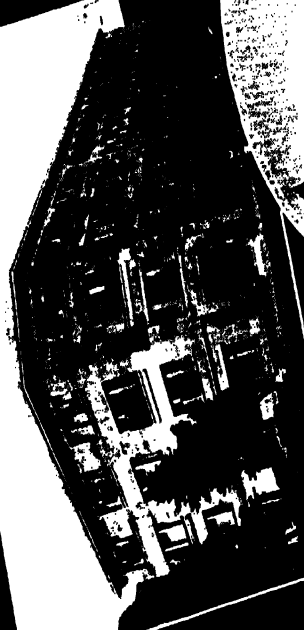
THE CENTRAL BANK
OF INDIA



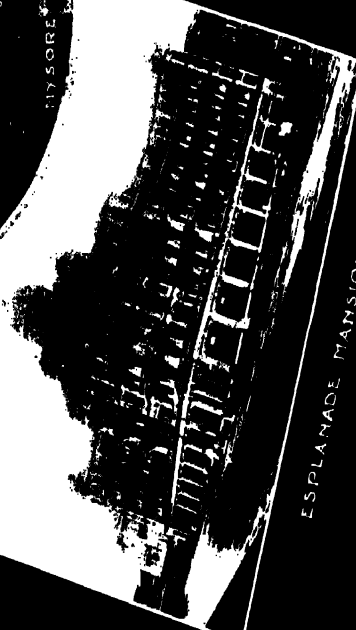
CALCUTTA CLUB



MYSORE MEMORIAL



THE INSTITUTE
OF HYGIENE



ESPLANADE MANSIONS

It is in St. John's Churchyard. The mausoleum is a massive structure octagonal in form with a double dome which lays claim to be the oldest piece of masonry in Calcutta. The date of its erection is supposed to be at some time prior to 1696-97. It shelters the body of Job Charnock.

**Charnock
Mausoleum.**

The present official residence of the Governor of Bengal is situated on the north of the Esplanade. It was built in 1803. The building consists of a central block, containing the Durbar chamber and the Ball-rooms, and four wings, which may be considered as distinct houses, and are connected with the main portion by means of galleries. Each of these wings is so constructed that, from whatever side the wind may blow, a through current of air can be obtained through every room. The grand entrance lies on the north side and is approached by a handsome and spacious flight of steps, leading to a noble portico on the first floor. The main attraction of Government house undoubtedly lies in its collection of portraits of Governor-Generals of India. The collection was begun towards the close of the eighteenth century by the acquisition of the pictures of Lord Clive and Warren Hastings.

**Government
House.**

The Calcutta Maidan contains a large number of Monuments and Statues erected in memory of historical personages. Of the statues the following may be mentioned: Lord Hardinge, Lord Roberts, the Marquess of Dufferin and Ava, and Sir James Outram (near Park Street).

**Monuments on
The Maidan.**

At the extreme Southern end of the Maidan near the Ganges is situated the *Lascar Memorial*. This handsome stone tower was erected in memory of the Lascars of Bengal and Assam who lost their lives in the Great War. The *Cenotaph* at the Northern end of the Maidan was erected in memory of the European residents of Calcutta who fell in the Great War.

Calcutta possesses a large number of Churches, of which the Cathedral is the finest. There are also places of worship sacred to the Hindus, the Muhammadans, the Buddhists, the Jews, the Parsees and the Jains. The *New Synagogue* (Canning Street) is one of the handsomest Jewish places of worship in Calcutta. *The Parsee Fire Temple*, situated at 26, Ezra Street, attracts all Parsee visitors to Calcutta. The *Kalighat Temple*, The *Thanthania Kali Temple*, The *Jain Temple* off Circular Road, and The *Buddhist Vihara* (on College Square), deserve special mention in this connection.

About six miles to the north of Calcutta on the right bank of the Ganges stands the famous monastery of Belur, founded in 1899 by the late Swami Vivekananda after his signal success at the Parliament of Religions held at Chicago, U. S. A., where he represented Hinduism. He was the apostle of the Neo-Vedantic movement which has awakened in the hearts of the people of India a consciousness of their ancient religious culture and a sense of duty and responsibility to their spiritual heritage. This movement has since spread over India as well as abroad, and there are now over 100 branches. The institution trains young men in the ideals of renunciation and service, and seeks to popularise through their medium the teachings of the Vedantic scripture and its universal truths. The spiritual ideas of the ancient wisdom of the East are disseminated in the West by teachers trained in the Math, thus working towards helpful union of the ideals of the East and the West.

It is also the head-quarters of the Ramkrishna Mission, one of the premier Social Service organisations actuated by the ideals of renunciation and service. A charitable Dispensary, an Industrial School, and a Guest House, is attached to the Math.

In the City of Calcutta, besides educational institutions and orphanages, there are two centres mainly for the publication of the Ramkrishna-Vivekananda literature, including three monthly magazines the 'Udbodhan' in Bengali, the 'Samanway' in Hindi, and the 'Prabuddha Bharata' in English.

The Port Commissioners of Calcutta have established a Ferry Steamer Station close to the Belur Math and it is a delightful trip from Calcutta to where the monastery is situated. It is also a 10 minutes' walk from the Grand Trunk Road, along which the Howrah-Bally Khal Motor Buses ply.

A few miles above Calcutta on the left bank of the Ganges stands the beautiful temple-garden of Dakshineswar, known as Rani Rashmani's Kali-bari, or the Temple of the Divine Mother. A fine row of 12 Shiva Temples, facing the river front, make a picturesque foreground. Sri Ramkrishna Paramhansa, the saint of Dakshineswar, practised great austerities here and ultimately realised God. He conceived the original idea of learning the different methods of worship from the professed teachers of the principal religions of the world, Hinduism, Mahomedanism and Christianity, one after another, and from direct experience arrived at the great truth of the harmony underlying all religions. Thus, by direct experience, he came to the conclusion that all religions constitute so many paths leading to the same goal. His profound wisdom and sanctity of life drew towards him many famous men of his time, among whom was Keshub Chandra Sen, the celebrated leader of the Brahmo movement. His life was an embodiment of sweet-souled sympathy and love to persons of all religious faiths, as he tirelessly preached to those who came to him. He trained and left behind him several *sannyasin* disciples, chief among them was Swami Vivekananda, the founder of the Ramkrishna Mission and the Neo-Vedantic movement referred to in the last paragraph. Many people of all religious beliefs visit his place of meditation, and the room in which he lived, and consider Dakshineswar as a place of pilgrimage. The garden is about 6 miles north of Calcutta, and can be easily reached by a Bus service from Shambazar *viâ* Cossipore Road, as well as a Ferry Steamer service of the Port Commissioners. Country boats are also available from Calcutta.

RAILWAYS AND STEAMSHIP LINES.

Calcutta is connected with the rest of India by three great Railways and one extensive steamship line.

1. The East India Railway links Calcutta to Bombay and Lahore.
2. The Bengal Nagpur Railway connects Calcutta with Madras and Bombay.
3. The Eastern Bengal Railway connects Calcutta with Darjeeling and Assam.
4. The British India Steam Navigation Company run services to Rangoon, Madras and other ports.

Besides these there are several minor railway and steamship lines which run services to various places in West and East Bengal. Direct steamer services to foreign ports are also plentiful in Calcutta and, very often, the fares are cheaper from Calcutta than Bombay or Colombo. However the time factor does not enable Calcutta to cater to those who are in a hurry to go over to London, Paris or New York.

STATIONS.

Calcutta has two great stations. The Howrah station is on the right bank of the Bhagirathi and is the terminus of the East India and Bengal Nagpur Railways. A pontoon bridge joins this station to Calcutta. The other station is the Sealdah station, the terminus of the Eastern Bengal Railway. A great highway, the Harrison Road, stretches between these two Railway stations and an immense traffic passes along this road and the Howrah bridge every day.

BOOKING OFFICES.

The Bengal Nagpur Railway has the following important Booking offices :—

1. At the Howrah station (open day and night).
2. Esplanade Booking Office, Esplanade Mansions, Telephone, Calcutta, 361.
3. Messrs. Thomas Cook and Sons, 4, Dalhousie Square, Telephone, Calcutta, 5560.
4. Army and Navy Stores, Chowringhee, Telephone, Calcutta, 444 (No luggage taken).

5. Bhowanipur Booking Office, 83, Ashutosh Mukherjee Road, Telephone, Calcutta South, 843.

The East India Railway Booking Offices are as follows :—

1. At the Howrah Station (open day and night).
2. No. 6, Fairlie Place, Telephone, Calcutta, 497.
3. No. A1, Kyd Street, Telephone, Calcutta, 2140.
4. Chowringhee Booking Office, Telephone, Calcutta, 498, 4, Chowringhee Place.
5. Army and Navy Stores (no luggage taken) Chowringhee, Telephone, Calcutta, 4313.
6. Burra Bazar Booking Office, 116/1, Harrison Road, Telephone, Burra Bazar, 1124.
7. Shambazar Booking Office, 82/8, Cornwallis Street, Telephone, Burra Bazar, 2400.
8. Beadon Street Booking Office, 7, Beadon Street, Telephone, Burra Bazar, 1270.
9. Bhowanipur Booking Office, 139/3, Russa Road, Telephone, South, 843.

The Eastern Bengal Railway has the following booking offices :—

1. At the Sealdah Station (open day and night).
2. No. 3, Koilaghat Street, Telephone, Regent, 388.
3. Army and Navy Stores, Chowringhee, Telephone, Calcutta, 4319.

All the City booking offices remain open between 9 A.M. and 6 P.M. on week days for booking passengers. Luggage and parcels close at 5 P.M., i.e. an hour earlier.

AMUSEMENTS (CINEMA).

Chitra, 83, Cornwallis Street.
Crown Cinema, 138-1, Cornwallis St.
Elphinstone Picture Palace,
Chowringhee Place.
Empire Theatre, 4, Chowringhee place.
Empress Theatre, 91, Russa Road.
Globe Theatre, 7, Lindsay Street.
Madan Theatre and Palace of Varieties, 136, Corporation St.
Plaza, 19B, Chowringhee Road.
Chhaya, Circular Road.
Chitra Chhaya, College Street.

Regal Talkies, 4, Corporation St.
Cornwallis Theatre, 138, Cornwallis Street.
Rupabani, 76-3, Cornwallis Street.
Chhabighar, 10, Harrison Road.
Purna Theatre, P 54 & 55, Russa Road, South.
New Empire Theatre, 1, Humayun Place.
New Cinema, 171, Dharamtollah St.
Bharat-lakshmi, Central Avenue.
Talkie Show House, Fariapukur St.
Raonak Mahal, 32A, Dharamtollah Street.

AMUSEMENTS (THEATRE).

Minerva Theatre, 6, Beadon Street.	Star Theatre (Bengali).
Rung Mahal (Bengali), 76-1, Cornwallis Street.	Alfred Theatre (Hindi).
Natya Niketan (Bengali), 2, Raja Rajkissen Street.	Corinthian Theatre (Hindi).

NEWSPAPERS (DAILIES).

Advance, 74, Dharamtollah Street.	Ananda Bazar Patrika (Bengali), 1, Barman Street.
Basumati (Bengali), 166, Bow Bazar Street.	Star of India (evening paper), 9, Dharamtollah Street.
Statesman, "Statesman House", Chowringhee Square.	Hindu, 47, Kailash Bose Street.
Amrita Bazar Patrika, 2, Ananda Chatterjee Lane.	Vishwamitra (Hindi), 14-1A, Sambhu Chatterjee Street.
Forward, 32, Upper Circular Road.	

(WEEKLIES).

Capital, 1, Commercial Buildings.	Ananda Bazar Patrika (Bengali).
Commercial Gazette, 2, Royal Exchange Place.	United Bengal.

MAGAZINES.

Bharatvarsa (Bengali)	120/2, Upper Circular Road.
Prabasi	Do. Cornwallis Street.
Vichitra	Do. 27/1, Fariapukur Street.
Basumati	Do. 166, Bow Bazar Street.
Udayan	Do. 79/9, Lower Circular Road.
Calcutta Review (English)	University of Calcutta.
Modern Review	Do. 120/2, Upper Circular Road.
Parichaya (High class Bengali quarterly).	

BANKS.

Allahabad Bank, Ltd.,	6, Royal Exchange Place.
American Express Co.,	14, Government Place, East.
Benares Bank, Ltd.,	31, Burtolla Street.
Bank of India, Ltd.,	201, Harrison Road.
Bengal Provincial Co-op. Bank, Ltd.,	Writers' Buildings.

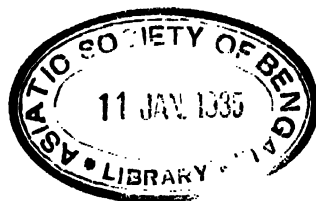
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